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ARMY ELECTRONICS COMMAND WHITE SANDS MISSILE RANGE N--ETC F/G 16/4.2
12823A LANCE, MISSILE NUMBER 4285, ROUND NUMBER 305 NCL (7 DECE--ETC(U)
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METEOROLOGICAL DATA REPORT

12823A LANCE
MISSILE NO. 4285, ROUND NO. 305 NCL
(7 DECEMBER 1977)

BY

WSMR METEOROLOGICAL TEAM

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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 12823A Lance, Missile Number 4285, Round Number 305 NCL, are presented in tabular form. | | | |

CONTENTS

| | |
|---|-----------|
| INTRODUCTION ----- | PAGE 1 |
| DISCUSSION ----- | 1 |
| TABLES | |
| I. Surface Observations taken at Don Site ----- | 1 |
| II. Pilot-Balloon-Measured Wind Data, Release No. 1 at 0805 MST ----- | 2 |
| III. Pilot-Balloon-Measured Wind Data, Release No. 2 at 0815 MST ----- | 4 |
| IV. Anemometer-Measured Wind Speed and Direction, Pole No. 1 ----- | 7 |
| V. Holloman Significant Level Data (Release Time: 0800 MST) ----- | 8 |
| VI. Holloman Upper Air Data (Release Time: 0800 MST) ----- | 10 |
| VII. Holloman Mandatory Levels (Release Time: 0800 MST) ----- | 17 |
| VIII. Don Significant Level Data (Release Time: 0805 MST) ----- | 18 |
| IX. Don Upper Air Data (Release Time: 0805 MST) ----- | 20 |
| X. Don Mandatory Levels (Release Time: 0805 MST) ----- | 25 |
| XI. Jallen Significant Level Data (Release Time: 0900 MST) ----- | 26 |
| XII. Jallen Upper Air Data (Release Time: 0900 MST) ----- | 28 |
| XIII. Jallen Mandatory Levels (Release Time: 0900 MST) ----- | 34 |

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| Buff Section | <input type="checkbox"/> |
| UNANNOUNCED | <input type="checkbox"/> |
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INTRODUCTION

12823A Lance, Missile Number 4285, Round Number 305 NCL, was launched from Don Site, White Sands Missile Range (WSMR), New Mexico, at 0818 HRS MST, 7 December 1977. The scheduled launch time was 0815 HRS MST.

DISCUSSION

Meteorological data were gathered and reduced by the WSMR Meteorological Team, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The data are presented in the following tabulations.

| | | |
|-------------------|-------|-------------------|
| ELEVATION | 3,997 | FEET/MSL |
| PRESSURE | 878.2 | MBS |
| TEMPERATURE | 2.5 | °C |
| RELATIVE HUMIDITY | 64 | % |
| DEW POINT | -3.5 | °C |
| DENSITY | 1,109 | GM/M ³ |
| WIND SPEED | 04 | MPH |
| WIND DIRECTION | 347 | DEGREES |
| CLOUD COVER | CLEAR | |

TABLE I. SURFACE OBSERVATIONS TAKEN AT DON SITE, 0815 HRS MST/7 DECEMBER 1977.

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) | HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|------------------|------------------------|----------------|
| SUR | 346 | 04 | 2100 | 229 | 04 |
| 100 | 040 | 01 | 2200 | 246 | 06 |
| 200 | 023 | 02 | 2300 | 253 | 06 |
| 300 | 218 | 04 | 2400 | 256 | 07 |
| 400 | 158 | 05 | 2500 | 280 | 09 |
| 500 | 195 | 09 | 2600 | 285 | 11 |
| 600 | 197 | 05 | 2700 | 288 | 14 |
| 700 | 162 | 05 | 2800 | 291 | 17 |
| 800 | 246 | 04 | 2900 | 286 | 11 |
| 900 | 197 | 09 | 3000 | 286 | 16 |
| 1000 | 177 | 10 | 3100 | 283 | 12 |
| 1100 | 187 | 09 | 3200 | 275 | 17 |
| 1200 | 181 | 10 | 3300 | 281 | 22 |
| 1300 | 158 | 09 | 3400 | 285 | 19 |
| 1400 | 102 | 06 | 3500 | 277 | 17 |
| 1500 | 121 | 06 | 3600 | 270 | 16 |
| 1600 | 087 | 09 | 3700 | 274 | 20 |
| 1700 | 061 | 05 | 3800 | 283 | 18 |
| 1800 | 083 | 06 | 3900 | 300 | 22 |
| 1900 | 139 | 03 | 4000 | 290 | 20 |
| 2000 | 233 | 02 | 4100 | 282 | 16 |

TABLE II. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 1
RELEASED FROM DON SITE, AT 0805 MST/7 DECEMBER 1977
12823A LANCE, MISSILE NO. 4285, ROUND NO. 305 NCL

PIBAL RELEASE POINT WSTM COORDINATES:

X = 511,988.37 Y = 247,396.36 Z = 3,996.83

APPROXIMATELY: 100 YDS EAST OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|
| 4200 | 288 | 14 |
| 4300 | 297 | 20 |
| 4400 | 298 | 18 |
| 4500 | 303 | 17 |
| 4600 | 311 | 20 |
| 4700 | 294 | 20 |
| 4800 | 295 | 23 |
| 4900 | 297 | 21 |
| 5000 | 310 | 25 |
| 5100 | 312 | 27 |
| 5200 | 312 | 27 |
| 5300 | 308 | 26 |
| 5400 | 312 | 24 |
| 5500 | 306 | 25 |
| 5600 | 301 | 27 |

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|
| 5700 | 302 | 27 |
| 5800 | 304 | 26 |
| 5900 | 306 | 26 |
| 6000 | 306 | 26 |
| 6100 | 308 | 26 |
| 6200 | 310 | 23 |
| 6300 | 302 | 22 |
| 6400 | 299 | 25 |
| 6500 | 300 | 22 |
| 6600 | 303 | 24 |
| 6700 | 305 | 24 |
| 6800 | 305 | 24 |
| 6900 | 308 | 25 |
| 7000 | 297 | 25 |

TABLE II. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|
| SUR | 347 | 04 |
| 100 | 036 | 01 |
| 200 | 036 | 01 |
| 300 | 018 | 01 |
| 400 | CALM | |
| 500 | 200 | 01 |
| 600 | 250 | 02 |
| 700 | 190 | 02 |
| 800 | 224 | 09 |
| 900 | 190 | 12 |
| 1000 | 188 | 11 |
| 1100 | 193 | 09 |
| 1200 | 159 | 07 |
| 1300 | 107 | 06 |
| 1400 | 136 | 07 |
| 1500 | 023 | 04 |
| 1600 | 074 | 03 |
| 1700 | 079 | 05 |
| 1800 | 091 | 05 |
| 1900 | 143 | 02 |
| 2000 | 339 | 02 |

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|
| 2100 | 285 | 09 |
| 2200 | 260 | 08 |
| 2300 | 197 | 04 |
| 2400 | 235 | 09 |
| 2500 | 262 | 11 |
| 2600 | 280 | 13 |
| 2700 | 282 | 14 |
| 2800 | 284 | 15 |
| 2900 | 287 | 17 |
| 3000 | 285 | 20 |
| 3100 | 289 | 16 |
| 3200 | 325 | 07 |
| 3300 | 300 | 06 |
| 3400 | 263 | 32 |
| 3500 | 273 | 28 |
| 3600 | 278 | 24 |
| 3700 | 280 | 21 |
| 3800 | 290 | 19 |
| 3900 | 294 | 20 |
| 4000 | 296 | 20 |
| 4100 | 296 | 20 |

TABLE III. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 2
RELEASED FROM DON SITE, AT 0815 MST/7 DECEMBER 1977
12823A LANCE, MISSILE NO. 4285, ROUND NO. 305 NCL

PIBAL RELEASE POINT WSTM COORDINATES:

X = 511,988.37 Y = 247,396.36 Z = 3,996.83

APPROXIMATELY: 100 YDS EAST OF LAUNCHER

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|
| 4200 | 297 | 19 |
| 4300 | 295 | 17 |
| 4400 | 301 | 20 |
| 4500 | 303 | 21 |
| 4600 | 302 | 21 |
| 4700 | 303 | 21 |
| 4800 | 306 | 21 |
| 4900 | 311 | 24 |
| 5000 | 313 | 26 |
| 5100 | 312 | 27 |
| 5200 | 309 | 27 |
| 5300 | 303 | 27 |
| 5400 | 307 | 27 |
| 5500 | 302 | 27 |
| 5600 | 300 | 27 |
| 5700 | 302 | 26 |
| 5800 | 303 | 27 |
| 5900 | 303 | 26 |
| 6000 | 306 | 26 |
| 6100 | 305 | 25 |
| 6200 | 307 | 26 |
| 6300 | 305 | 26 |
| 6400 | 302 | 26 |
| 6500 | 298 | 25 |

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|
| 6600 | 296 | 28 |
| 6700 | 296 | 27 |
| 6800 | 291 | 26 |
| 6900 | 293 | 27 |
| 7000 | 295 | 26 |
| 7100 | 289 | 23 |
| 7200 | 287 | 23 |
| 7300 | 287 | 23 |
| 7400 | 295 | 38 |
| 7500 | 293 | 19 |
| 7600 | 293 | 28 |
| 7700 | 296 | 31 |
| 7800 | 294 | 31 |
| 7900 | 294 | 31 |
| 8000 | 295 | 31 |
| 8100 | 297 | 32 |
| 8200 | 299 | 30 |
| 8300 | 297 | 33 |
| 8400 | 300 | 33 |
| 8500 | 303 | 34 |
| 8600 | 302 | 33 |
| 8700 | 299 | 33 |
| 8800 | 297 | 32 |
| 8900 | 297 | 32 |

TABLE III. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|
| 9000 | 296 | 29 |
| 9100 | 293 | 29 |
| 9200 | 292 | 29 |
| 9300 | 291 | 30 |
| 9400 | 294 | 30 |
| 9500 | 290 | 28 |
| 9600 | 288 | 29 |

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|
| 9700 | 286 | 30 |
| 9800 | 283 | 31 |
| 9900 | 286 | 30 |
| 10000 | 286 | 29 |
| 10100 | 286 | 31 |
| 10200 | 290 | 32 |
| 10300 | 293 | 31 |

TABLE III. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| T-TIME (SEC) | SPEED (MPH) | DIR DEG |
|-----------------|----------------|------------|
| -30.0 | 02 | 345 |
| -20.0 | 04 | 350 |
| -10.0 | 04 | 354 |
| -00.00 | 04 | 340 |
| +10.00 | 04 | 340 |

TABLE IV. ANEMOMETER-MEASURED WIND SPEED AND DIRECTION, POLE NO. 1
12823A LANCE, MISSILE NO. 4285, ROUND NO. 305 NCL
LAUNCHED FROM DON SITE, 0815 MST/7 DECEMBER 1977

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

GEODETIC COORDINATES
32.88865 LAT DEG
126.09965 LON DEG

SIGNIFICANT LEVEL DATA
J41G010841
HULLLOMAN
TABLE V.

STATION ALTITUDE 4126.59 FEET MSL
7 DEC. 77
ASCENSION NO. 841
0900 HRS MST

| PRESSURE GEOMETRIC ALTITUDE | | TEMPERATURE | | REL. HUM. PERCENT |
|-----------------------------|----------|-------------|---------------------|-------------------|
| MILLIBARS | MSL FEET | AIR DEGREES | DEWPOINT CENTIGRADE | |
| 873.9 | 4126.6 | -0.2 | -5.6 | 67.0 |
| 863.4 | 4450.3 | 3.8 | -6.2 | 48.0 |
| 850.0 | 4868.9 | 5.9 | -4.5 | 47.0 |
| 828.3 | 5566.8 | 8.4 | -5.8 | 36.0 |
| 818.3 | 5896.5 | 9.2 | -5.8 | 34.0 |
| 798.3 | 6568.3 | 8.8 | -10.6 | 24.0 |
| 776.3 | 7327.4 | 9.7 | -14.1 | 17.0 |
| 718.3 | 9436.7 | 9.0 | -17.0 | 14.0 |
| 700.0 | 10134.7 | 7.4 | -18.3 | 14.0 |
| 644.3 | 12352.8 | 3.0 | -21.8 | 14.0 |
| 607.3 | 13912.6 | -0.4 | -17.1 | 27.0 |
| 558.3 | 16104.1 | -3.7 | -26.4 | 26.0 |
| 500.0 | 18915.5 | -11.8 | -25.5 | 31.0 |
| 490.5 | 19398.0 | -10.5 | -30.8 | 17.0 |
| 433.3 | 22477.9 | -18.2 | -35.6 | 20.0 |
| 400.0 | 24413.3 | -23.6 | -40.1 | 20.0 |
| 334.3 | 28614.7 | -34.4 | -50.8 | 17.0 |
| 300.0 | 31059.9 | -40.7 | | |
| 251.3 | 34924.6 | -50.3 | | |
| 250.0 | 35035.5 | -49.7 | | |
| 236.8 | 36195.0 | -50.4 | | |
| 208.8 | 38353.7 | -54.8 | | |
| 200.0 | 39754.3 | -54.8 | | |
| 150.0 | 45665.5 | -62.3 | | |
| 132.3 | 48198.2 | -62.5 | | |
| 116.3 | 50776.6 | -65.7 | | |
| 100.0 | 53764.5 | -66.9 | | |
| 88.3 | 56228.4 | -65.3 | | |
| 76.3 | 59086.5 | -71.7 | | |
| 70.0 | 60746.0 | -71.7 | | |

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GEODETIC COORDINATES
32.88865 LAT DEG
136.09965 LON DEG

SIGNIFICANT LEVEL DATA
J41001384;
MULLOMAN
TABLE V. (CONT)

STATION ALTITUDE +126.59 FEET MSL
7 DEC. 77
ASCENSION NO. 841

| PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET | TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE | REL. HUM. PERCENT |
|--|---|----------------------|
| | | |
| 66.3 61785.6 | -74.0 | |
| 60.3 63634.4 | -64.4 | |
| 50.0 67393.3 | -61.8 | |
| 30.0 77827.7 | -56.6 | |
| 27.3 79770.1 | -58.0 | |
| 24.8 81757.4 | -54.5 | |
| 20.0 86245.1 | -54.3 | |
| 16.0 90931.2 | -51.4 | |
| 11.5 97876.6 | -53.4 | |
| 10.0 100827.3 | -49.5 | |
| 7.8 106100.2 | -50.4 | |

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UPPER AIR DATA
J410J10841
HULLMAN
TABLE VI.

STATION ALTITUDE 4126.59 FEET MSL
7 DEC 77 08:00 HRS MST
ASCENSION NO. 841

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL. HUMID. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|-------------------------------|---------------------------------------|------------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
| | | | | | | | DIRECTION DEGREES(TN) | SPEED KNOTS | |
| 4126.6 | 873.9 | -2 | -5.6 | 67.0 | 1113.4 | 644.2 | 0 | 0 | 1.000269 |
| 4500.0 | 861.8 | 4.0 | -6.0 | 47.9 | 1081.2 | 649.2 | 188.5 | 2.3 | 1.000260 |
| 5000.0 | 845.9 | 6.4 | -4.7 | 44.9 | 1052.2 | 652.0 | 188.5 | 5.5 | 1.000255 |
| 5500.0 | 830.4 | 8.2 | -5.0 | 37.1 | 1026.4 | 654.0 | 188.5 | 8.6 | 1.000248 |
| 6000.0 | 815.2 | 9.1 | -6.5 | 32.5 | 1004.2 | 655.1 | 188.5 | 11.7 | 1.000242 |
| 6500.0 | 800.3 | 8.8 | -10.1 | 25.0 | 987.4 | 654.6 | 220.5 | 9.5 | 1.000234 |
| 7000.0 | 785.7 | 9.3 | -12.5 | 20.0 | 967.9 | 655.1 | 256.8 | 10.6 | 1.000227 |
| 7500.0 | 771.4 | 9.6 | -14.4 | 16.8 | 949.3 | 655.5 | 283.8 | 13.6 | 1.000221 |
| 8000.0 | 757.3 | 9.5 | -15.0 | 16.0 | 932.6 | 655.2 | 296.3 | 16.4 | 1.000217 |
| 8500.0 | 743.5 | 9.3 | -15.7 | 15.3 | 916.1 | 655.0 | 302.8 | 17.5 | 1.000213 |
| 9000.0 | 729.9 | 9.1 | -16.4 | 14.6 | 900.0 | 654.8 | 306.3 | 18.6 | 1.000209 |
| 9500.0 | 716.6 | 8.9 | -17.1 | 14.3 | 884.5 | 654.5 | 308.7 | 19.8 | 1.000205 |
| 10000.0 | 703.5 | 7.7 | -18.1 | 14.0 | 871.9 | 653.1 | 307.6 | 20.9 | 1.000201 |
| 10500.0 | 690.5 | 6.7 | -18.9 | 14.0 | 859.0 | 651.9 | 306.1 | 22.0 | 1.000198 |
| 11000.0 | 677.7 | 5.7 | -19.7 | 14.0 | 846.1 | 650.8 | 303.0 | 23.6 | 1.000195 |
| 11500.0 | 665.2 | 4.7 | -20.5 | 14.0 | 833.4 | 649.6 | 299.8 | 25.3 | 1.000192 |
| 12000.0 | 652.9 | 3.7 | -21.3 | 14.0 | 821.0 | 648.4 | 295.7 | 27.4 | 1.000188 |
| 12500.0 | 640.7 | 2.7 | -21.1 | 15.2 | 808.7 | 647.2 | 291.7 | 29.2 | 1.000186 |
| 13000.0 | 628.7 | 1.6 | -19.3 | 19.4 | 796.5 | 646.0 | 287.7 | 30.5 | 1.000184 |
| 13500.0 | 616.9 | .5 | -17.9 | 23.6 | 784.6 | 644.7 | 287.3 | 32.0 | 1.000182 |
| 14000.0 | 605.3 | -5 | -17.2 | 27.0 | 772.7 | 643.6 | 288.6 | 33.5 | 1.000180 |
| 14500.0 | 593.8 | -1.3 | -18.0 | 26.7 | 760.1 | 642.7 | 290.6 | 35.4 | 1.000177 |
| 15000.0 | 582.5 | -2.0 | -16.7 | 26.5 | 747.8 | 641.7 | 292.5 | 37.3 | 1.000174 |
| 15500.0 | 571.4 | -2.8 | -19.5 | 26.3 | 735.6 | 640.8 | 291.8 | 36.9 | 1.000171 |
| 16000.0 | 560.5 | -3.5 | -20.2 | 26.0 | 723.7 | 639.9 | 291.2 | 36.2 | 1.000168 |
| 16500.0 | 549.7 | -4.8 | -21.0 | 26.7 | 713.2 | 638.4 | 291.0 | 34.9 | 1.000165 |
| 17000.0 | 539.0 | -6.3 | -21.9 | 27.6 | 703.1 | 636.7 | 291.6 | 34.5 | 1.000162 |
| 17500.0 | 528.5 | -7.7 | -22.8 | 28.5 | 693.2 | 634.9 | 292.9 | 35.0 | 1.000160 |
| 18000.0 | 518.3 | -9.2 | -23.7 | 29.4 | 683.5 | 633.2 | 295.0 | 35.3 | 1.000157 |
| 18500.0 | 508.2 | -10.6 | -24.7 | 30.3 | 673.9 | 631.4 | 297.4 | 35.6 | 1.000155 |

UPPER AIR DATA
 341001,841
 HULLMAN
 TABLE VI. (CONT)

STATION ALTITUDE 4124.59 FEET MSL
 7 DEC. 77 0800 HRS MST
 ASCENSION NO. 841

GEODETIC COORDINATES
 32.88865 LAT DEG
 106.39965 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|--|-------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 19000.0 | 498.3 | -11.6 | 28.5 | 663.3 | 630.3 | 302.4 | 33.9 | 1.000152 |
| 19500.0 | 488.5 | -10.8 | 17.1 | 648.3 | 631.2 | 307.8 | 32.7 | 1.000147 |
| 20000.0 | 478.8 | -12.0 | 17.6 | 638.4 | 629.7 | 311.8 | 33.7 | 1.000145 |
| 20500.0 | 469.2 | -13.3 | 18.1 | 628.7 | 628.1 | 314.2 | 35.3 | 1.000142 |
| 21000.0 | 459.9 | -14.5 | 18.6 | 619.2 | 626.6 | 314.3 | 37.7 | 1.000140 |
| 21500.0 | 450.7 | -15.8 | 19.0 | 609.8 | 625.1 | 312.4 | 39.0 | 1.000138 |
| 22000.0 | 441.7 | -17.0 | 19.5 | 600.6 | 623.6 | 309.6 | 40.0 | 1.000136 |
| 22500.0 | 432.9 | -18.3 | 20.0 | 591.5 | 622.0 | 306.4 | 39.8 | 1.000133 |
| 23000.0 | 424.1 | -19.7 | 20.0 | 582.6 | 620.3 | 303.3 | 39.5 | 1.000131 |
| 23500.0 | 415.4 | -21.1 | 20.0 | 573.9 | 618.6 | 302.4 | 38.0 | 1.000129 |
| 24000.0 | 406.9 | -22.4 | 20.0 | 565.3 | 616.9 | 302.2 | 36.9 | 1.000127 |
| 24500.0 | 398.5 | -23.8 | 19.9 | 556.7 | 615.2 | 304.0 | 37.0 | 1.000125 |
| 25000.0 | 390.1 | -25.1 | 19.6 | 547.8 | 613.6 | 306.9 | 37.4 | 1.000123 |
| 25500.0 | 381.9 | -26.4 | 19.2 | 539.0 | 612.0 | 311.4 | 38.4 | 1.000121 |
| 26000.0 | 373.8 | -27.7 | 18.9 | 530.4 | 610.4 | 314.6 | 39.4 | 1.000119 |
| 26500.0 | 365.9 | -29.0 | 18.5 | 521.9 | 608.8 | 317.0 | 40.3 | 1.000117 |
| 27000.0 | 358.2 | -30.2 | 18.2 | 513.6 | 607.2 | 317.3 | 40.9 | 1.000115 |
| 27500.0 | 350.6 | -31.5 | 17.8 | 505.5 | 605.6 | 316.3 | 41.3 | 1.000113 |
| 28000.0 | 343.2 | -32.8 | 17.4 | 497.4 | 604.0 | 315.2 | 40.7 | 1.000111 |
| 28500.0 | 335.9 | -34.1 | 17.1 | 489.5 | 602.3 | 314.1 | 39.6 | 1.000109 |
| 29000.0 | 328.6 | -35.4 | 14.3.. | 481.5 | 600.7 | 314.2 | 38.6 | 1.000108 |
| 29500.0 | 321.5 | -36.7 | 10.8.. | 473.5 | 599.1 | 315.2 | 37.8 | 1.000106 |
| 30000.0 | 314.4 | -38.0 | 7.4.. | 465.7 | 597.4 | 315.6 | 37.4 | 1.000104 |
| 30500.0 | 307.5 | -39.3 | 3.9.. | 458.0 | 595.8 | 315.8 | 37.1 | 1.000102 |
| 31000.0 | 300.8 | -40.5 | .4.. | 450.5 | 594.2 | 315.1 | 35.6 | 1.000100 |
| 31500.0 | 294.0 | -41.8 | | 442.7 | 592.6 | 314.2 | 34.2 | 1.000099 |
| 32000.0 | 287.3 | -43.0 | | 435.0 | 591.0 | 312.7 | 35.8 | 1.000097 |
| 32500.0 | 280.8 | -44.3 | | 427.5 | 589.4 | 312.1 | 37.8 | 1.000095 |
| 33000.0 | 274.5 | -45.5 | | 420.1 | 587.8 | 313.1 | 40.5 | 1.000094 |
| 33500.0 | 268.3 | -46.8 | | 412.8 | 586.2 | 314.2 | 42.6 | 1.000092 |

.. AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

BEST AVAILABLE COPY

STATION ALTITUDE 4126.59 FEET MSL
 7 DEC. 77 0800 HRS MST
 ASCENSION NO. 841

UPPER AIR DATA
 3410010841
 HULLMAN

GEODETIC COORDINATES
 32.88865 LAT DEG
 156.09965 LON DEG

TABLE VI. (CONT)

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|------------------------------------|----------------|---------------------------|
| 34000.0 | 262.2 | -48.0 | | 435.7 | 584.6 | 315.6 | 43.5 | 1.0000190 |
| 34500.0 | 256.2 | -49.2 | | 398.7 | 582.9 | 315.0 | 44.3 | 1.0000089 |
| 35000.0 | 250.4 | -49.9 | | 390.7 | 582.1 | 311.3 | 45.1 | 1.0000087 |
| 35500.0 | 244.6 | -50.0 | | 381.9 | 582.0 | 307.0 | 45.8 | 1.0000085 |
| 36000.0 | 239.0 | -50.3 | | 373.5 | 581.6 | 300.9 | 46.6 | 1.0000083 |
| 36500.0 | 233.4 | -50.9 | | 365.9 | 580.8 | 295.9 | 48.2 | 1.0000081 |
| 37000.0 | 227.9 | -51.7 | | 358.6 | 579.7 | 294.2 | 51.5 | 1.0000080 |
| 37500.0 | 222.6 | -52.6 | | 351.6 | 578.6 | 292.6 | 54.9 | 1.0000078 |
| 38000.0 | 217.4 | -53.4 | | 344.6 | 577.5 | 293.0 | 59.7 | 1.0000077 |
| 38500.0 | 212.3 | -54.2 | | 337.8 | 576.4 | 293.3 | 64.6 | 1.0000075 |
| 39000.0 | 207.3 | -54.8 | | 330.8 | 575.7 | 292.0 | 66.9 | 1.0000074 |
| 39500.0 | 202.4 | -54.8 | | 323.0 | 575.7 | 290.1 | 68.4 | 1.0000072 |
| 40000.0 | 197.6 | -55.1 | | 315.7 | 575.3 | 288.2 | 69.9 | 1.0000070 |
| 40500.0 | 192.9 | -55.7 | | 309.1 | 574.4 | 286.5 | 71.3 | 1.0000069 |
| 41000.0 | 188.2 | -56.4 | | 302.5 | 573.6 | 285.0 | 73.1 | 1.0000067 |
| 41500.0 | 183.7 | -57.0 | | 296.1 | 572.7 | 285.1 | 76.4 | 1.0000066 |
| 42000.0 | 179.3 | -57.6 | | 289.8 | 571.9 | 285.3 | 79.5 | 1.0000065 |
| 42500.0 | 175.0 | -58.3 | | 283.7 | 571.1 | 286.2 | 81.3 | 1.0000063 |
| 43000.0 | 170.8 | -58.9 | | 277.7 | 570.2 | 287.0 | 82.6 | 1.0000062 |
| 43500.0 | 166.7 | -59.6 | | 271.8 | 569.4 | 287.6 | 80.8 | 1.0000061 |
| 44000.0 | 162.7 | -60.2 | | 266.1 | 568.5 | 288.1 | 78.6 | 1.0000059 |
| 44500.0 | 158.8 | -60.8 | | 260.5 | 567.7 | 287.9 | 74.6 | 1.0000058 |
| 45000.0 | 154.9 | -61.5 | | 255.0 | 566.8 | 287.7 | 71.3 | 1.0000057 |
| 45500.0 | 151.2 | -62.1 | | 249.6 | 566.0 | 287.3 | 70.1 | 1.0000056 |
| 46000.0 | 147.5 | -62.3 | | 243.8 | 565.7 | 287.2 | 69.1 | 1.0000054 |
| 46500.0 | 143.9 | -62.4 | | 237.9 | 565.6 | 287.4 | 68.8 | 1.0000053 |
| 47000.0 | 140.4 | -62.4 | | 232.1 | 565.6 | 287.9 | 68.5 | 1.0000052 |
| 47500.0 | 137.0 | -62.4 | | 226.4 | 565.5 | 289.3 | 68.5 | 1.0000050 |
| 48000.0 | 133.6 | -62.5 | | 220.9 | 565.4 | 290.6 | 68.5 | 1.0000049 |
| 48500.0 | 130.3 | -62.9 | | 215.9 | 564.9 | 292.5 | 69.2 | 1.0000048 |

UPPER AIR DATA
J410010841
JULIOMAN
TABLE VI. (CONT)

STATION ALTITUDE 4126.59 FEET MSL
7 DEC. 77 0800 HRS MST
ASCENSION NO. 841

GEOMETRIC COORDINATES
32.88865 LAT DEG
106.09965 LOI, DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 49500.0 | 127.1 | -63.5 | | 211.2 | 564.1 | 294.2 | 69.9 | 1.000047 |
| 49500.0 | 124.0 | -64.1 | | 206.6 | 563.3 | 295.4 | 69.9 | 1.000046 |
| 50000.0 | 120.9 | -64.7 | | 202.1 | 562.4 | 296.4 | 69.6 | 1.000045 |
| 50500.0 | 117.9 | -65.4 | | 197.7 | 561.6 | 296.8 | 69.3 | 1.000044 |
| 51000.0 | 115.0 | -65.8 | | 193.2 | 561.0 | 296.5 | 69.0 | 1.000043 |
| 51500.0 | 112.1 | -66.0 | | 188.6 | 560.7 | 296.2 | 68.6 | 1.000042 |
| 52000.0 | 109.3 | -66.2 | | 184.0 | 560.5 | 295.6 | 68.3 | 1.000041 |
| 52500.0 | 106.6 | -66.4 | | 179.6 | 560.2 | 295.0 | 67.9 | 1.000040 |
| 53000.0 | 103.9 | -66.6 | | 175.3 | 559.9 | 294.4 | 66.0 | 1.000039 |
| 53500.0 | 101.3 | -66.8 | | 171.1 | 559.6 | 293.8 | 63.8 | 1.000038 |
| 54000.0 | 98.9 | -66.7 | | 166.8 | 559.7 | 293.0 | 59.8 | 1.000037 |
| 54500.0 | 96.4 | -66.4 | | 162.4 | 560.1 | 292.0 | 53.6 | 1.000036 |
| 55000.0 | 94.0 | -66.1 | | 158.1 | 560.6 | 290.6 | 47.5 | 1.000035 |
| 55500.0 | 91.6 | -65.8 | | 153.9 | 561.0 | 288.7 | 40.8 | 1.000034 |
| 56000.0 | 89.3 | -65.4 | | 149.8 | 561.5 | 285.3 | 31.1 | 1.000033 |
| 56500.0 | 87.1 | -65.9 | | 146.4 | 560.8 | 278.8 | 21.6 | 1.000033 |
| 57000.0 | 84.9 | -67.0 | | 143.5 | 559.3 | 262.9 | 12.8 | 1.000032 |
| 57500.0 | 82.7 | -68.1 | | 140.6 | 557.8 | 240.8 | 8.2 | 1.000031 |
| 58000.0 | 80.7 | -69.3 | | 137.8 | 556.3 | 195.3 | 6.6 | 1.000031 |
| 58500.0 | 78.6 | -71.4 | | 135.1 | 554.7 | 194.7 | 5.4 | 1.000030 |
| 59000.0 | 76.6 | -71.5 | | 132.4 | 553.2 | 231.3 | 4.0 | 1.000029 |
| 59500.0 | 74.7 | -71.7 | | 129.1 | 552.9 | 273.6 | 5.8 | 1.000029 |
| 60000.0 | 72.8 | -71.7 | | 125.8 | 552.9 | 290.1 | 10.1 | 1.000028 |
| 60500.0 | 70.9 | -71.7 | | 122.6 | 552.9 | 295.4 | 14.5 | 1.000027 |
| 61000.0 | 69.1 | -72.3 | | 119.8 | 552.2 | 295.1 | 18.3 | 1.000027 |
| 61500.0 | 67.3 | -73.4 | | 117.3 | 550.6 | 294.8 | 22.1 | 1.000026 |
| 62000.0 | 65.6 | -72.9 | | 114.1 | 551.3 | 294.2 | 23.1 | 1.000025 |
| 62500.0 | 63.9 | -71.3 | | 109.8 | 554.9 | 293.4 | 22.7 | 1.000024 |
| 63000.0 | 62.3 | -67.7 | | 105.6 | 558.4 | 292.4 | 21.9 | 1.000024 |
| 63500.0 | 60.7 | -65.1 | | 101.7 | 561.9 | 290.8 | 17.0 | 1.000023 |

BEST AVAILABLE COPY

UPPER AIR DATA
J41JUG94)
HULLMAN
TABLE VI. (CONT)

STATION ALTITUDE 4124.59 FEET MSL
7 DEC. 77 0302 HRS MST
ASCENSION NO. 411

GEODETIC COORDINATES
32.88865 LAT DEG
176.39965 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
| | | | | | | DIRECTION DEGREES(TN) | SPEED KNOTS | |
| 6400.0 | 59.2 | -64.1 | | 98.7 | 563.0 | 287.9 | 12.0 | 1.000022 |
| 6450.0 | 57.8 | -63.8 | | 96.1 | 563.7 | 282.2 | 7.5 | 1.000021 |
| 6500.0 | 56.3 | -63.5 | | 93.6 | 564.1 | 266.8 | 3.7 | 1.000021 |
| 6550.0 | 54.9 | -63.1 | | 91.1 | 564.6 | 180.9 | 2.0 | 1.000020 |
| 6600.0 | 53.6 | -62.8 | | 88.7 | 565.1 | 182.0 | 1.8 | 1.000020 |
| 6650.0 | 52.3 | -62.4 | | 86.4 | 565.5 | 189.8 | 1.6 | 1.000019 |
| 6700.0 | 51.0 | -62.1 | | 84.2 | 566.0 | 235.5 | 1.5 | 1.000019 |
| 6750.0 | 49.7 | -61.7 | | 82.0 | 566.4 | 277.2 | 3.0 | 1.000018 |
| 6800.0 | 48.5 | -61.5 | | 79.9 | 566.8 | 288.7 | 4.9 | 1.000018 |
| 6850.0 | 47.4 | -61.2 | | 77.9 | 567.1 | 290.3 | 6.7 | 1.000017 |
| 6900.0 | 46.2 | -61.0 | | 75.9 | 567.4 | 300.6 | 8.6 | 1.000017 |
| 6950.0 | 45.1 | -60.8 | | 74.0 | 567.8 | 302.8 | 12.4 | 1.000016 |
| 7000.0 | 44.0 | -60.5 | | 72.1 | 568.1 | 303.3 | 18.2 | 1.000016 |
| 7050.0 | 42.9 | -60.3 | | 70.3 | 568.4 | 303.6 | 24.1 | 1.000016 |
| 7100.0 | 41.9 | -60.0 | | 68.5 | 568.8 | 305.4 | 22.0 | 1.000015 |
| 7150.0 | 40.9 | -59.8 | | 66.8 | 569.1 | 308.3 | 18.7 | 1.000015 |
| 7200.0 | 39.9 | -59.5 | | 65.1 | 569.4 | 313.2 | 14.4 | 1.000014 |
| 7250.0 | 38.9 | -59.3 | | 63.4 | 569.8 | 338.6 | 6.1 | 1.000014 |
| 7300.0 | 38.0 | -59.0 | | 61.8 | 570.1 | 75.2 | 6.2 | 1.000014 |
| 7350.0 | 37.1 | -58.8 | | 60.2 | 570.4 | 89.4 | 9.9 | 1.000013 |
| 7400.0 | 36.2 | -58.5 | | 58.7 | 570.8 | 83.1 | 9.5 | 1.000013 |
| 7450.0 | 35.3 | -58.3 | | 57.2 | 571.1 | 76.5 | 9.4 | 1.000013 |
| 7500.0 | 34.5 | -58.0 | | 55.8 | 571.4 | 76.6 | 8.6 | 1.000012 |
| 7550.0 | 33.6 | -57.8 | | 54.4 | 571.8 | 78.3 | 7.6 | 1.000012 |
| 7600.0 | 32.8 | -57.5 | | 53.0 | 572.1 | 82.4 | 6.8 | 1.000012 |
| 7650.0 | 32.0 | -57.3 | | 51.7 | 572.4 | 96.8 | 6.8 | 1.000012 |
| 7700.0 | 31.2 | -57.0 | | 50.4 | 572.7 | 119.3 | 7.2 | 1.000011 |
| 7750.0 | 30.5 | -56.8 | | 49.1 | 573.1 | 117.0 | 7.6 | 1.000011 |
| 7800.0 | 29.8 | -56.7 | | 47.9 | 573.1 | 117.3 | 7.6 | 1.000011 |
| 7850.0 | 29.0 | -57.1 | | 46.8 | 572.6 | 117.0 | 7.6 | 1.000010 |

UPPER AIR DATA
 3410010941
 HULLMAN
 GFODETTIC COORDINATES
 32.88865 LAT DEG
 106.09965 LON DEG

STATION ALTITUDE 4124.59 FEET MSL
 7 DEC. 77 0000 HRS MST
 ASCENSION NO. 841

TABLE VI. (CONT)

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE | | WIND DATA | SPEED OF SOUND KNOTS | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|--------------------------|----------------------------|---------------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | DIRECTION DEGREES(TN) | | |
| 7900.0 | 29.3 | -57.4 | | 117.0 | 7.3 | 1.000016 |
| 7950.0 | 27.7 | -57.8 | | 117.0 | 6.8 | 1.000010 |
| 8000.0 | 27.2 | -57.6 | | 117.0 | 6.3 | 1.000010 |
| 8050.0 | 26.4 | -56.7 | | 117.0 | 5.2 | 1.000009 |
| 8100.0 | 25.7 | -55.8 | | 117.0 | 4.1 | 1.000009 |
| 8150.0 | 25.1 | -55.0 | | 117.0 | 3.1 | 1.000009 |
| 8200.0 | 24.5 | -54.5 | | 117.0 | 3.1 | 1.000009 |
| 8250.0 | 23.9 | -54.5 | | 117.0 | 3.2 | 1.000008 |
| 8300.0 | 23.4 | -54.4 | | 117.0 | 3.3 | 1.000008 |
| 8350.0 | 22.8 | -54.4 | | 117.0 | 3.8 | 1.000008 |
| 8400.0 | 22.3 | -54.4 | | 117.0 | 4.3 | 1.000008 |
| 8450.0 | 21.7 | -54.4 | | 123.6 | 3.1 | 1.000008 |
| 8500.0 | 21.2 | -54.4 | | 193.0 | 1.1 | 1.000008 |
| 8550.0 | 20.7 | -54.3 | | 262.0 | 3.2 | 1.000007 |
| 8600.0 | 20.2 | -54.3 | | 270.6 | 5.4 | 1.000007 |
| 8650.0 | 19.8 | -54.1 | | 273.8 | 7.4 | 1.000007 |
| 8700.0 | 19.3 | -53.8 | | 275.6 | 9.4 | 1.000007 |
| 8750.0 | 18.8 | -53.5 | | 276.8 | 11.4 | 1.000007 |
| 8800.0 | 18.4 | -53.2 | | 274.0 | 11.3 | 1.000006 |
| 8850.0 | 18.3 | -52.9 | | 269.2 | 10.5 | 1.000006 |
| 8900.0 | 17.5 | -52.6 | | 263.5 | 9.8 | 1.000006 |
| 8950.0 | 17.1 | -52.3 | | 257.1 | 9.1 | 1.000006 |
| 9000.0 | 16.7 | -52.0 | | 256.8 | 10.2 | 1.000006 |
| 9050.0 | 16.3 | -51.7 | | 262.3 | 13.3 | 1.000006 |
| 9100.0 | 15.9 | -51.4 | | 265.7 | 16.5 | 1.000006 |
| 9150.0 | 15.6 | -51.6 | | 268.0 | 19.8 | 1.000005 |
| 9200.0 | 15.2 | -51.7 | | 269.1 | 22.8 | 1.000005 |
| 9250.0 | 14.8 | -51.9 | | 267.3 | 24.7 | 1.000005 |
| 9300.0 | 14.5 | -52.0 | | 265.9 | 26.5 | 1.000005 |
| 9350.0 | 14.2 | -52.1 | | 264.6 | 28.3 | 1.000005 |

BEST AVAILABLE COPY

| STATION ALTITUDE 4124.59 FEET MSL 7 DEC. 77 23.3 HRS MST ASCENSION IS. 841 | | | | UPPER AIR DATA 341031J841 HULLOMAN | | | | GEODETIC COORDINATES 32.98865 LAT DEG 106.09965 LON DEG | | | |
|--|------|-----------------------|---|--|------------------------------|----------------------------|--|---|----------------|---------------------------|--|
| GEOMETRIC ALTITUDE MSL FEET | | PRESSURE MILLIBARS | TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES (TN) | | SPEED KNOTS | INDEX OF REFRACTION | |
| 94000.0 | 13.9 | -52.3 | | 21.8 | 579.0 | 263.4 | 263.4 | 33.2 | 1.000005 | | |
| 94500.0 | 13.5 | -52.4 | | 21.3 | 578.8 | 262.5 | 262.5 | 29.9 | 1.000005 | | |
| 95000.0 | 13.2 | -52.6 | | 20.8 | 578.6 | 261.5 | 261.5 | 29.3 | 1.000005 | | |
| 95500.0 | 12.7 | -52.7 | | 20.3 | 578.4 | 261.5 | 261.5 | 28.7 | 1.000005 | | |
| 96000.0 | 12.6 | -52.9 | | 19.9 | 578.2 | 259.5 | 259.5 | 28.2 | 1.000004 | | |
| 96500.0 | 12.3 | -53.0 | | 19.4 | 578.0 | 260.5 | 260.5 | 27.9 | 1.000004 | | |
| 97000.0 | 12.0 | -53.1 | | 19.0 | 577.8 | 262.8 | 262.8 | 28.0 | 1.000004 | | |
| 97500.0 | 11.7 | -53.3 | | 18.6 | 577.7 | 265.2 | 265.2 | 28.1 | 1.000004 | | |
| 98000.0 | 11.4 | -53.2 | | 18.1 | 577.7 | 267.5 | 267.5 | 28.3 | 1.000004 | | |
| 98500.0 | 11.2 | -52.6 | | 17.6 | 578.6 | 268.4 | 268.4 | 27.8 | 1.000004 | | |
| 99000.0 | 10.9 | -51.9 | | 17.2 | 579.5 | 266.0 | 266.0 | 25.8 | 1.000004 | | |
| 99500.0 | 10.6 | -51.3 | | 16.7 | 580.3 | 263.1 | 263.1 | 23.8 | 1.000004 | | |
| 100000.0 | 10.4 | -50.6 | | 16.3 | 581.2 | 259.9 | 259.9 | 22.0 | 1.000004 | | |
| 100500.0 | 10.2 | -49.9 | | 15.9 | 582.0 | 255.9 | 255.9 | 20.2 | 1.000004 | | |
| 101000.0 | 9.9 | -49.5 | | 15.5 | 582.6 | 251.1 | 251.1 | 20.6 | 1.000003 | | |
| 101500.0 | 9.7 | -49.6 | | 15.1 | 582.5 | 246.5 | 246.5 | 21.1 | 1.000003 | | |
| 102000.0 | 9.5 | -49.7 | | 14.8 | 582.4 | 242.2 | 242.2 | 21.8 | 1.000003 | | |
| 102500.0 | 9.2 | -49.8 | | 14.4 | 582.2 | 233.1 | 233.1 | 22.5 | 1.000003 | | |
| 103000.0 | 9.0 | -49.9 | | 14.1 | 582.1 | | | | 1.000003 | | |
| 103500.0 | 8.8 | -50.0 | | 13.8 | 582.0 | | | | 1.000003 | | |
| 104000.0 | 8.6 | -50.0 | | 13.4 | 581.9 | | | | 1.000003 | | |
| 104500.0 | 8.4 | -50.1 | | 13.1 | 581.8 | | | | 1.000003 | | |
| 105000.0 | 8.2 | -50.2 | | 12.8 | 581.7 | | | | 1.000003 | | |
| 105500.0 | 8.0 | -50.3 | | 12.5 | 581.6 | | | | 1.000003 | | |
| 106000.0 | 7.8 | -50.4 | | 12.3 | 581.5 | | | | 1.000003 | | |

STATION ALTITUDE 4126.59 FEET MSL
7 DEC. 77
UNID MRS MST
ASCENSION NO. 441

MANDATORY LEVELS
3410210841
MULLOMAN
TABLE VII.

GEODETIC COORDINATES
32.48865 LAT DEG
106.09965 LON DEG

| PRESSURE GEOPOTENTIAL | | TEMPERATURE | | REL. HUM. PERCENT | WIND DATA | |
|-----------------------|---------|------------------------------|-----------------------|----------------------|--------------------------|----------------|
| MILLIBARS | FEET | AIR DEGREES CENTIGRADE | DWPOINT CENTIGRADE | | DIRECTION DEGREES(TN) | SPEED KNOTS |
| 850.0 | 4868. | 5.9 | -4.5 | 47. | 188.5 | 4.6 |
| 800.0 | 6510. | 8.8 | -13.2 | 25. | 221.4 | 9.4 |
| 750.0 | 8264. | 9.4 | -15.4 | 16. | 299.9 | 16.9 |
| 700.0 | 10135. | 7.4 | -18.3 | 14. | 307.2 | 21.3 |
| 650.0 | 12120. | 3.5 | -21.5 | 14. | 294.7 | 28.0 |
| 600.0 | 14233. | -9 | -17.5 | 27. | 289.5 | 34.4 |
| 550.0 | 16497. | -4.8 | -21.0 | 27. | 291.0 | 34.9 |
| 500.0 | 18974. | -11.8 | -25.5 | 31. | 301.8 | 34.1 |
| 450.0 | 21561. | -15.9 | -34.0 | 19. | 312.0 | 39.2 |
| 400.0 | 24431. | -23.6 | -43.1 | 20. | 303.8 | 37.0 |
| 350.0 | 27562. | -31.6 | -48.0 | 18. | 316.0 | 41.4 |
| 300.0 | 31092. | -40.7 | | | 314.9 | 35.2 |
| 250.0 | 35079. | -49.7 | | | 310.3 | 45.3 |
| 200.0 | 39312. | -54.8 | | | 288.7 | 69.6 |
| 175.0 | 42592. | -58.3 | | | 286.5 | 81.9 |
| 150.0 | 45745. | -62.3 | | | 287.1 | 69.2 |
| 125.0 | 49433. | -63.9 | | | 295.5 | 69.9 |
| 100.0 | 52879. | -66.9 | | | 293.0 | 59.6 |
| 80.0 | 58306. | -69.5 | | | 193.1 | 5.5 |
| 70.0 | 60896. | -71.7 | | | 295.0 | 18.9 |
| 60.0 | 63901. | -64.3 | | | 287.0 | 11.0 |
| 50.0 | 67582. | -61.8 | | | 285.4 | 4.1 |
| 40.0 | 72138. | -59.5 | | | 328.4 | 7.8 |
| 30.0 | 78384. | -56.0 | | | 117.8 | 7.6 |
| 25.0 | 81874. | -54.2 | | | 117.0 | 3.1 |
| 20.0 | 86564. | -54.3 | | | 275.4 | 9.1 |
| 15.0 | 92663. | -51.4 | | | 265.7 | 26.8 |
| 10.0 | 101272. | -49.5 | | | 244.2 | 21.5 |

.. AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODETIC COORDINATES
32.57209 LAT DEG
106.29439 LON DEG

SIGNIFICANT LEVEL DATA

3410200001

DOV

TABLE VIII.

STATION ALTITUDE 4003.69 FEET MSL
7 DEC. 77 0800 HRS MST
ASCENSION NO. 1

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE | | REL. HUM. PERCENT |
|-----------------------|-----------------------------------|----------------|------------------------|----------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | |
| 879.1 | 4003.7 | -0.3 | -1.6 | 91.0 |
| 850.0 | 4902.9 | 6.7 | -12.1 | 15.0 |
| 839.8 | 5261.2 | 8.9 | -21.0 | 10.0 |
| 805.3 | 6366.0 | 8.7 | -21.2 | 10.0 |
| 794.8 | 6722.2 | 9.7 | -20.4 | 10.0 |
| 733.3 | 8905.4 | 8.0 | -21.7 | 10.0 |
| 700.0 | 10160.7 | 7.8 | -21.9 | 10.0 |
| 637.8 | 12646.9 | 2.0 | -26.4 | 10.0 |
| 548.8 | 16565.8 | -5.3 | -32.1 | 10.0 |
| 506.8 | 18568.7 | -11.7 | -37.1 | 10.0 |
| 500.0 | 18927.6 | -12.0 | -37.3 | 10.0 |
| 443.6 | 21687.3 | -17.0 | -41.3 | 10.0 |
| 400.0 | 24407.5 | -23.7 | -46.6 | 10.0 |
| 377.8 | 25763.1 | -27.6 | -49.7 | 10.0 |
| 300.0 | 31040.6 | -41.3 | | |
| 266.8 | 33607.6 | -48.3 | | |
| 250.0 | 35007.1 | -48.9 | | |
| 215.6 | 38128.9 | -54.4 | | |
| 200.0 | 39720.3 | -54.9 | | |
| 183.8 | 41479.0 | -56.6 | | |
| 150.0 | 45623.2 | -63.7 | | |
| 139.8 | 47029.6 | -65.3 | | |
| 136.3 | 47535.2 | -64.3 | | |
| 116.8 | 50601.7 | -66.9 | | |
| 100.0 | 53670.2 | -66.3 | | |
| 86.3 | 56554.7 | -70.6 | | |
| 73.8 | 59584.8 | -70.6 | | |
| 70.0 | 60603.3 | -72.6 | | |
| 65.3 | 61931.0 | -74.0 | | |
| 56.8 | 64643.6 | -65.2 | | |

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STATION ALTITUDE 4003.69 FEET MSL
 7 DEC. 77
 0805 HRS MST
 ASCENSION NO. 1

SIGNIFICANT LEVEL DATA
 3410200001
 UOV
 TABLE VIII. (CONT)

GEONETIC COORDINATES
 32.5/209 LAT NEG
 106.29439 LON DEG

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE | | REL. HUM. PERCENT |
|-----------------------|-----------------------------------|----------------|------------------------|----------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | |
| 50.0 | 67200.1 | -61.4 | | |
| 46.7 | 68586.0 | -59.9 | | |

BEST AVAILABLE COPY

STATION ALTITUDE 4003.69 FEET MSL
 7 DEC. 77 0805 HRS MST
 ASCENSION NO. 1

UPPER AIR DATA
 3410200701
 00N
 TABLE IX.

GEOMETRIC COORDINATES
 32.57209 LAT NFG
 106.29439 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREE CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES (TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 4003.7 | 679.1 | -3 | 91.0 | 1114.8 | 644.3 | 230.0 | 1.9 | 1.000277 |
| 4500.0 | 862.9 | 3.6 | 49.1 | 1084.5 | 648.6 | 291.5 | 1.8 | 1.000261 |
| 5000.0 | 846.9 | 7.3 | 13.6 | 1051.4 | 652.6 | 261.0 | 2.4 | 1.000241 |
| 5500.0 | 831.4 | 8.9 | 10.0 | 1026.6 | 654.4 | 245.5 | 3.4 | 1.000234 |
| 6000.0 | 816.2 | 8.6 | 10.0 | 1008.1 | 654.5 | 262.0 | 5.8 | 1.000230 |
| 6500.0 | 801.3 | 9.1 | 10.0 | 988.0 | 654.7 | 274.6 | 9.7 | 1.000226 |
| 7000.0 | 786.7 | 9.5 | 10.0 | 969.1 | 655.1 | 281.4 | 13.6 | 1.000222 |
| 7500.0 | 772.3 | 9.1 | 10.0 | 952.7 | 654.7 | 285.7 | 17.3 | 1.000218 |
| 8000.0 | 758.2 | 8.7 | 10.0 | 936.6 | 654.2 | 292.7 | 18.5 | 1.000214 |
| 8500.0 | 744.5 | 8.3 | 10.0 | 920.8 | 653.8 | 297.6 | 19.8 | 1.000210 |
| 9000.0 | 730.7 | 8.0 | 10.0 | 905.0 | 653.4 | 295.5 | 19.9 | 1.000207 |
| 9500.0 | 717.3 | 7.9 | 10.0 | 886.6 | 653.3 | 295.1 | 20.6 | 1.000203 |
| 10000.0 | 704.2 | 7.6 | 10.0 | 872.6 | 653.2 | 297.2 | 22.2 | 1.000199 |
| 10500.0 | 691.2 | 7.0 | 10.0 | 859.0 | 652.3 | 298.6 | 24.7 | 1.000196 |
| 11000.0 | 676.4 | 5.8 | 10.0 | 846.6 | 650.9 | 299.4 | 27.4 | 1.000193 |
| 11500.0 | 665.6 | 4.7 | 10.0 | 834.4 | 649.5 | 295.6 | 28.0 | 1.000190 |
| 12000.0 | 653.4 | 3.5 | 10.0 | 822.4 | 648.1 | 293.0 | 28.5 | 1.000187 |
| 12500.0 | 641.3 | 2.3 | 10.0 | 810.6 | 646.8 | 292.8 | 28.9 | 1.000184 |
| 13000.0 | 629.2 | 1.3 | 10.0 | 798.2 | 645.6 | 292.9 | 29.3 | 1.000181 |
| 13500.0 | 617.3 | .4 | 10.0 | 785.8 | 644.5 | 293.3 | 29.6 | 1.000178 |
| 14000.0 | 605.5 | -.5 | 10.0 | 773.5 | 643.4 | 294.7 | 31.5 | 1.000175 |
| 14500.0 | 594.0 | -1.5 | 10.0 | 761.4 | 642.3 | 295.9 | 33.6 | 1.000172 |
| 15000.0 | 582.8 | -2.4 | 10.0 | 749.5 | 641.2 | 296.3 | 35.7 | 1.000170 |
| 15500.0 | 571.7 | -3.3 | 10.0 | 737.2 | 640.0 | 296.9 | 36.6 | 1.000167 |
| 16000.0 | 560.8 | -4.2 | 10.0 | 726.4 | 638.9 | 297.6 | 36.6 | 1.000164 |
| 16500.0 | 550.2 | -5.2 | 10.0 | 715.0 | 637.8 | 297.9 | 36.4 | 1.000161 |
| 17000.0 | 539.5 | -6.7 | 10.0 | 705.1 | 636.0 | 298.2 | 36.1 | 1.000159 |
| 17500.0 | 529.0 | -8.3 | 10.0 | 695.5 | 634.1 | 299.2 | 35.8 | 1.000157 |
| 18000.0 | 518.7 | -9.8 | 10.0 | 686.1 | 632.2 | 299.6 | 34.9 | 1.000154 |
| 18500.0 | 508.6 | -11.4 | 10.0 | 676.8 | 630.3 | 298.4 | 32.7 | 1.000152 |

STATION ALTITUDE 4003.69 FEET MSL
7 DEC. 77 0805 HRS MST
ASCENSION NO. 1

UPPER AIR DATA
3410200001
70N
TABLE IX. (CONT)

GEOSTIC COORDINATES
32.57209 LAT NEG
106.29439 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES (TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 19000.0 | 498.5 | -12.1 | 10.0 | 665.2 | 629.5 | 296.6 | 30.3 | 1.000150 |
| 19500.0 | 488.6 | -13.0 | 10.0 | 654.1 | 628.5 | 294.0 | 27.8 | 1.000147 |
| 20000.0 | 478.9 | -13.6 | 10.0 | 643.1 | 627.4 | 299.5 | 27.9 | 1.000144 |
| 20500.0 | 469.3 | -14.7 | 10.0 | 632.4 | 626.4 | 306.6 | 29.2 | 1.000142 |
| 21000.0 | 460.0 | -15.2 | 10.0 | 621.8 | 625.4 | 312.8 | 32.5 | 1.000140 |
| 21500.0 | 450.6 | -16.3 | 10.0 | 611.4 | 624.3 | 314.2 | 35.6 | 1.000137 |
| 22000.0 | 441.7 | -17.3 | 10.0 | 601.4 | 623.2 | 312.6 | 38.3 | 1.000135 |
| 22500.0 | 432.7 | -18.6 | 10.0 | 592.2 | 621.6 | 311.7 | 39.6 | 1.000133 |
| 23000.0 | 423.9 | -20.0 | 10.0 | 583.2 | 619.9 | 309.8 | 39.6 | 1.000131 |
| 23500.0 | 415.3 | -21.3 | 10.0 | 574.3 | 618.3 | 305.4 | 37.6 | 1.000129 |
| 24000.0 | 406.6 | -22.6 | 10.0 | 565.6 | 616.7 | 301.5 | 37.4 | 1.000127 |
| 24500.0 | 398.4 | -24.0 | 10.0 | 557.0 | 615.0 | 298.0 | 38.2 | 1.000125 |
| 25000.0 | 390.1 | -25.4 | 10.0 | 548.6 | 613.2 | 293.6 | 38.8 | 1.000123 |
| 25500.0 | 382.0 | -26.8 | 10.0 | 540.3 | 611.4 | 308.8 | 39.5 | 1.000121 |
| 26000.0 | 373.9 | -28.2 | 9.6** | 531.8 | 609.7 | 311.9 | 36.9 | 1.000119 |
| 26500.0 | 365.6 | -29.5 | 8.6** | 523.1 | 608.1 | 314.4 | 38.5 | 1.000117 |
| 27000.0 | 357.4 | -30.8 | 7.7** | 514.5 | 606.5 | 314.1 | 38.7 | 1.000115 |
| 27500.0 | 350.2 | -32.1 | 6.7** | 506.1 | 604.8 | 314.4 | 39.0 | 1.000113 |
| 28000.0 | 342.6 | -33.4 | 5.8** | 497.8 | 603.2 | 315.6 | 39.4 | 1.000111 |
| 28500.0 | 335.2 | -34.7 | 4.8** | 489.7 | 601.6 | 316.2 | 39.8 | 1.000109 |
| 29000.0 | 328.0 | -36.0 | 3.9** | 481.8 | 599.9 | 316.2 | 40.3 | 1.000107 |
| 29500.0 | 320.9 | -37.3 | 2.9** | 474.0 | 598.3 | 316.3 | 38.7 | 1.000106 |
| 30000.0 | 314.0 | -38.6 | 2.0** | 466.3 | 596.6 | 316.6 | 36.9 | 1.000104 |
| 30500.0 | 307.2 | -39.9 | 1.0** | 458.8 | 595.0 | 317.4 | 37.1 | 1.000102 |
| 31000.0 | 300.5 | -41.2 | .1** | 451.4 | 593.3 | 317.8 | 38.0 | 1.000101 |
| 31500.0 | 293.6 | -42.6 | | 443.8 | 591.6 | 317.5 | 40.4 | 1.000099 |
| 32000.0 | 287.1 | -43.9 | | 436.4 | 589.8 | 316.9 | 42.4 | 1.000097 |
| 32500.0 | 280.6 | -45.3 | | 429.1 | 588.1 | 316.3 | 43.9 | 1.000096 |
| 33000.0 | 274.3 | -46.6 | | 421.9 | 586.3 | 316.8 | 44.3 | 1.000094 |
| 33500.0 | 268.1 | -48.0 | | 414.9 | 584.6 | 317.5 | 44.2 | 1.000092 |

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

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STATION ALTITUDE 4003.69 FEET MSL
1 DEC. 77 0805 HRS MST
ASCENSION NO. 1

UPPER AIR DATA
3410200001
70N
TABLE IX. (CONT)

GEOMETRIC COORDINATES
32.57209 LAT NFR
106.29439 LON NEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TA) | SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 34000.0 | 262.0 | -40.5 | | 406.2 | 584.0 | 313.7 | 42.2 | 1.000090 |
| 34500.0 | 250.0 | -48.7 | | 397.2 | 583.7 | 308.2 | 40.5 | 1.000088 |
| 35000.0 | 250.1 | -48.9 | | 368.5 | 583.4 | 298.6 | 41.9 | 1.000087 |
| 35500.0 | 244.3 | -49.8 | | 380.9 | 582.3 | 291.5 | 45.0 | 1.000085 |
| 36000.0 | 236.6 | -50.6 | | 373.5 | 581.1 | 291.9 | 52.4 | 1.000083 |
| 36500.0 | 233.0 | -51.5 | | 366.3 | 580.0 | 292.4 | 59.6 | 1.000082 |
| 37000.0 | 227.6 | -52.4 | | 359.2 | 578.8 | 293.5 | 65.5 | 1.000080 |
| 37500.0 | 222.3 | -53.5 | | 352.2 | 577.7 | 294.5 | 71.4 | 1.000078 |
| 38000.0 | 217.1 | -54.2 | | 345.4 | 576.5 | 293.0 | 71.6 | 1.000077 |
| 38500.0 | 212.0 | -54.5 | | 337.8 | 576.0 | 291.5 | 71.9 | 1.000075 |
| 39000.0 | 207.0 | -54.7 | | 330.1 | 575.8 | 289.7 | 72.3 | 1.000074 |
| 39500.0 | 202.1 | -54.8 | | 322.5 | 575.6 | 287.9 | 73.2 | 1.000072 |
| 40000.0 | 197.3 | -55.2 | | 315.4 | 575.2 | 286.3 | 76.3 | 1.000070 |
| 40500.0 | 192.6 | -55.7 | | 308.6 | 574.5 | 285.1 | 79.1 | 1.000069 |
| 41000.0 | 188.1 | -56.1 | | 301.9 | 573.9 | 285.0 | 81.1 | 1.000067 |
| 41500.0 | 183.6 | -56.6 | | 295.4 | 573.2 | 285.0 | 82.6 | 1.000066 |
| 42000.0 | 179.2 | -57.5 | | 289.4 | 572.1 | 285.9 | 82.7 | 1.000064 |
| 42500.0 | 174.8 | -58.5 | | 283.5 | 571.0 | 286.8 | 82.9 | 1.000063 |
| 43000.0 | 170.6 | -59.2 | | 277.8 | 569.8 | 287.5 | 83.6 | 1.000062 |
| 43500.0 | 166.5 | -60.1 | | 272.1 | 568.7 | 288.3 | 84.2 | 1.000061 |
| 44000.0 | 162.4 | -60.9 | | 266.6 | 567.5 | 288.4 | 84.3 | 1.000059 |
| 44500.0 | 158.5 | -61.6 | | 261.2 | 566.4 | 288.5 | 84.4 | 1.000058 |
| 45000.0 | 154.7 | -62.6 | | 255.9 | 565.2 | 288.4 | 83.4 | 1.000057 |
| 45500.0 | 150.9 | -63.5 | | 250.7 | 564.1 | 288.1 | 82.0 | 1.000056 |
| 46000.0 | 147.2 | -64.1 | | 245.3 | 563.2 | 287.8 | 80.3 | 1.000055 |
| 46500.0 | 143.6 | -64.7 | | 239.9 | 562.5 | 287.5 | 78.4 | 1.000053 |
| 47000.0 | 140.0 | -65.5 | | 234.6 | 561.7 | 287.3 | 77.3 | 1.000052 |
| 47500.0 | 136.5 | -64.4 | | 227.8 | 562.9 | 287.3 | 77.2 | 1.000051 |
| 48000.0 | 133.1 | -64.7 | | 222.5 | 562.5 | 287.9 | 77.1 | 1.000050 |
| 48500.0 | 129.8 | -65.1 | | 217.4 | 561.9 | 289.1 | 77.1 | 1.000048 |

GEOMETRIC COORDINATES
32.57209 LAT DEG
106.29439 LON DEG

UPPER AIR DATA
3410200001
00N
TABLE IX. (CONT)

STATION ALTITUDE 4003.69 FEET MSL
7 DEC. 77 0805 HRS MST
ASCENSION NO. 1

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE | | REL. HUM. PERCENT | DENSITY GM/CM ³ | SPEED OF SOUND | | WIND DATA | | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|-------------------------------|-------------------|-------|--------------------------|----------------|---------------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | | | METER | KNOTS | DIRECTION DEGREES(TN) | SPEED KNOTS | |
| 4000.0 | 120.0 | -65.5 | | | 212.4 | 501.3 | | 290.6 | 75.4 | 1.000007 |
| 4500.0 | 123.5 | -66.0 | | | 207.6 | 560.8 | | 292.3 | 72.3 | 1.000046 |
| 5000.0 | 120.4 | -66.4 | | | 202.8 | 560.2 | | 293.5 | 69.2 | 1.000045 |
| 5050.0 | 117.4 | -66.8 | | | 198.2 | 559.6 | | 294.0 | 66.0 | 1.000044 |
| 5100.0 | 114.5 | -66.8 | | | 193.3 | 559.0 | | 294.0 | 63.2 | 1.000043 |
| 5150.0 | 111.6 | -66.7 | | | 188.4 | 559.7 | | 293.5 | 60.5 | 1.000042 |
| 5200.0 | 108.8 | -66.6 | | | 183.6 | 559.9 | | 293.1 | 56.3 | 1.000041 |
| 5250.0 | 106.1 | -66.5 | | | 178.9 | 560.0 | | 292.9 | 50.1 | 1.000040 |
| 5300.0 | 103.4 | -66.4 | | | 174.3 | 560.1 | | 292.6 | 43.6 | 1.000039 |
| 5350.0 | 100.9 | -66.3 | | | 169.9 | 560.3 | | 292.8 | 36.8 | 1.000038 |
| 5400.0 | 98.3 | -66.8 | | | 166.0 | 559.6 | | 293.1 | 30.0 | 1.000037 |
| 5450.0 | 95.8 | -67.5 | | | 162.4 | 558.6 | | 291.6 | 26.3 | 1.000036 |
| 5500.0 | 93.4 | -68.3 | | | 158.9 | 557.6 | | 289.5 | 23.1 | 1.000035 |
| 5550.0 | 91.1 | -69.0 | | | 155.4 | 556.6 | | 286.4 | 20.0 | 1.000035 |
| 5600.0 | 88.8 | -69.8 | | | 152.1 | 555.6 | | 280.2 | 18.0 | 1.000034 |
| 5650.0 | 86.5 | -70.5 | | | 148.8 | 554.6 | | 272.7 | 16.3 | 1.000033 |
| 5700.0 | 84.3 | -70.6 | | | 145.1 | 554.4 | | 266.2 | 14.6 | 1.000032 |
| 5750.0 | 82.2 | -70.6 | | | 141.4 | 554.4 | | 262.0 | 12.6 | 1.000031 |
| 5800.0 | 80.1 | -70.6 | | | 137.8 | 554.4 | | 258.5 | 11.0 | 1.000031 |
| 5850.0 | 78.1 | -70.6 | | | 134.2 | 554.4 | | 265.1 | 10.6 | 1.000030 |
| 5900.0 | 76.1 | -70.6 | | | 130.8 | 554.4 | | 272.0 | 10.3 | 1.000029 |
| 5950.0 | 74.1 | -70.6 | | | 127.5 | 554.4 | | 276.3 | 11.1 | 1.000028 |
| 6000.0 | 72.2 | -71.4 | | | 124.7 | 553.3 | | 279.8 | 11.9 | 1.000028 |
| 6050.0 | 70.4 | -72.4 | | | 122.1 | 552.0 | | 282.5 | 13.0 | 1.000027 |
| 6100.0 | 68.6 | -73.0 | | | 119.3 | 551.1 | | 284.6 | 14.2 | 1.000027 |
| 6150.0 | 66.8 | -73.5 | | | 116.0 | 550.4 | | 286.7 | 15.4 | 1.000026 |
| 6200.0 | 65.1 | -73.8 | | | 113.7 | 550.1 | | 288.9 | 16.8 | 1.000025 |
| 6250.0 | 63.4 | -72.2 | | | 109.9 | 552.3 | | 290.8 | 18.2 | 1.000024 |
| 6300.0 | 61.8 | -70.5 | | | 106.3 | 554.5 | | 291.6 | 16.8 | 1.000024 |
| 6350.0 | 60.2 | -68.9 | | | 102.7 | 556.0 | | 292.7 | 15.4 | 1.000023 |

STATION ALTITUDE 4003.69 FEET MSL
7 DEC. 77
ASCENSION NO. 1

UPPER AIR DATA
34102000J1
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TABLE IX. (CONT)

GEODETIC COORDINATES
32.57209 LAT DEG
106.29439 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | REL. HUM. PERCENT | DENSITY GM/CM ³ | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|--------------------------------|-----------------------|----------------------------|----------------------|-------------------------------|----------------------------|--------------------------|----------------|---------------------------|
| | | | | | | DIRECTION DEGREES(TN) | SPEED KNOTS | |
| 64000.0 | 58.7 | -67.3 | | 99.4 | 559.0 | 293.1 | 12.4 | 1.000022 |
| 64500.0 | 57.2 | -65.7 | | 96.1 | 561.2 | 293.1 | 8.3 | 1.000021 |
| 65000.0 | 55.8 | -64.7 | | 93.2 | 562.5 | 291.3 | 4.6 | 1.000021 |
| 65500.0 | 54.4 | -63.9 | | 90.6 | 563.5 | 274.2 | 2.5 | 1.000020 |
| 66000.0 | 53.1 | -63.2 | | 88.1 | 564.5 | 205.7 | 1.5 | 1.000020 |
| 66500.0 | 51.8 | -62.4 | | 85.6 | 565.5 | 199.8 | 2.6 | 1.000019 |
| 67000.0 | 50.5 | -61.7 | | 83.2 | 566.5 | 202.7 | 3.8 | 1.000019 |
| 67500.0 | 49.3 | -61.1 | | 80.9 | 567.3 | | | 1.000018 |
| 68000.0 | 48.1 | -60.5 | | 78.8 | 568.1 | | | 1.000018 |
| 68500.0 | 46.9 | -60.0 | | 76.6 | 568.8 | | | 1.000017 |

GEOMETRIC COORDINATES
32.57209 LAT DEG
106.29439 LON DEG

MANDATORY LEVELS
341020J001
00N
TABLE X.

STATION ALTITUDE 4003.69 FEET MSL
7 DEC. 77
ASCENSION NO. 1
0805 HRS MST

| PRESSURE GEOPOTENTIAL | | TEMPERATURE | | REL. HUM. PERCENT | WIND DATA | |
|-----------------------|--------|------------------------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS | FEET | AIR DEGREES CENTIGRADE | DEWPOINT CENTIGRADE | | DIRECTION DEGREES(TN) | SPEED KNOTS |
| 850.0 | 4902. | 6.7 | -16.1 | 15. | 265.5 | 2.2 |
| 800.0 | 6544. | 9.2 | -20.8 | 10. | 275.3 | 10.1 |
| 750.0 | 8296. | 8.5 | -21.3 | 10. | 296.5 | 19.4 |
| 700.0 | 10161. | 7.8 | -21.9 | 10. | 297.6 | 22.8 |
| 650.0 | 12146. | 3.2 | -25.4 | 10. | 292.9 | 28.7 |
| 600.0 | 14256. | -1.0 | -28.7 | 10. | 295.5 | 32.6 |
| 550.0 | 16515. | -5.2 | -32.0 | 10. | 297.9 | 36.4 |
| 500.0 | 18936. | -12.0 | -37.3 | 10. | 296.8 | 50.6 |
| 450.0 | 21558. | -16.4 | -40.8 | 10. | 314.0 | 56.0 |
| 400.0 | 24424. | -23.7 | -46.6 | 10. | 298.3 | 38.1 |
| 350.0 | 27570. | -32.1 | -56.6 | 7.** | 314.6 | 39.1 |
| 300.0 | 31072. | -41.3 | | | 317.7 | 38.5 |
| 250.0 | 35049. | -48.9 | | | 296.8 | 42.3 |
| 200.0 | 39777. | -54.9 | | | 206.7 | 75.3 |
| 175.0 | 42559. | -58.3 | | | 287.0 | 83.1 |
| 150.0 | 45701. | -63.7 | | | 288.0 | 81.1 |
| 125.0 | 49352. | -65.8 | | | 292.2 | 72.5 |
| 100.0 | 53783. | -66.3 | | | 293.0 | 31.0 |
| 80.0 | 58157. | -70.6 | | | 262.6 | 10.7 |
| 70.0 | 60751. | -72.6 | | | 284.3 | 14.0 |
| 60.0 | 63728. | -68.7 | | | 293.1 | 13.0 |
| 50.0 | 67385. | -61.4 | | | | |

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

BEST AVAILABLE COPY

GEODETIC COORDINATES
33.16712 LAT NEG
106.49511 LON NEG

SIGNIFICANT LEVEL DATA
3410030469
JALLEN
TABLE XI.

STATION ALTITUDE 4051.00 FEET MSL
7 DEC. 77 0900 HRS MST
ASCENSION NO. 469

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE | | REL. HUM. PERCENT |
|-----------------------|-----------------------------------|----------------|------------------------|----------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | |
| 875.6 | 4051.0 | 4.8 | -6.7 | 43.0 |
| 865.9 | 4352.4 | 4.5 | -7.0 | 43.0 |
| 850.0 | 4847.7 | 4.5 | -5.3 | 49.0 |
| 838.8 | 5203.1 | 5.8 | -5.5 | 44.0 |
| 825.3 | 5639.6 | 6.9 | -7.1 | 36.0 |
| 814.8 | 5986.2 | 9.5 | -10.6 | 23.0 |
| 801.3 | 6441.6 | 10.9 | -12.5 | 18.0 |
| 771.3 | 7481.1 | 9.3 | -14.5 | 17.0 |
| 747.4 | 8339.1 | 11.3 | -14.4 | 15.0 |
| 700.0 | 10119.0 | 7.5 | -17.4 | 15.0 |
| 596.8 | 14349.6 | -1.9 | -15.6 | 34.0 |
| 562.8 | 15871.4 | -4.5 | -17.9 | 34.0 |
| 504.3 | 18666.6 | -11.5 | -26.7 | 27.0 |
| 500.0 | 18881.8 | -11.4 | -28.8 | 22.0 |
| 486.3 | 19580.3 | -11.1 | -30.1 | 19.0 |
| 427.8 | 22747.2 | -20.3 | -37.8 | 19.0 |
| 400.0 | 24367.8 | -23.2 | -41.9 | 16.0 |
| 337.3 | 28364.9 | -34.2 | -50.1 | 18.0 |
| 300.0 | 31011.2 | -41.0 | | |
| 250.0 | 34975.9 | -51.5 | | |
| 238.8 | 35945.9 | -53.0 | | |
| 232.8 | 36483.5 | -52.3 | | |
| 200.0 | 39683.1 | -54.1 | | |
| 150.0 | 45607.9 | -62.0 | | |
| 100.0 | 53662.0 | -69.1 | | |
| 89.3 | 55871.5 | -68.9 | | |
| 81.3 | 57718.8 | -65.7 | | |
| 70.0 | 60641.5 | -72.0 | | |
| 68.5 | 61056.7 | -73.2 | | |
| 62.3 | 62884.6 | -69.9 | | |

STATION ALTITUDE 4051.00 FEET MSL
7 DEC. 77
ASCENSION NO. 469

SIGNIFICANT LEVEL DATA
3410030469
JALLEN
TABLE XI. (CONT)

GEODETIC COORDINATES
33.16712 LAT NEG
106.49511 LON NEG

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT |
|-----------------------|-----------------------------------|---|----------------------|
| 57.3 | 64538.6 | -62.6 | |
| 50.0 | 67290.8 | -60.9 | |
| 32.8 | 75889.1 | -58.2 | |
| 30.0 | 77725.5 | -56.8 | |
| 26.8 | 80052.8 | -57.0 | |
| 24.8 | 81660.2 | -54.8 | |
| 20.0 | 86152.8 | -53.5 | |

STATION ALTITUDE 4051.00 FEET MSL
7 DEC. 77 0900 HRS MST
ASCENSION NO. 469

UPPER AIR DATA
3410030469
JALLEN
TABLE XII.

GEODETIC COORDINATES
33.16712 LAT NEG
106.49511 LON NEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 4051.0 | 875.6 | 4.8 | 43.0 | 1095.7 | 650.0 | 45.0 | 1.0 | 1.000262 |
| 4500.0 | 861.1 | 4.5 | 44.8 | 1078.7 | 649.7 | 37.6 | 1.4 | 1.000259 |
| 5000.0 | 845.2 | 5.1 | 46.9 | 1056.4 | 650.4 | 33.3 | 1.8 | 1.000255 |
| 5500.0 | 829.6 | 6.5 | 38.6 | 1031.5 | 652.1 | 30.7 | 2.3 | 1.000248 |
| 6000.0 | 814.4 | 9.5 | 22.8 | 1002.3 | 655.4 | 9.7 | .2 | 1.000236 |
| 6500.0 | 799.6 | 10.8 | 17.9 | 979.9 | 656.8 | 215.7 | 3.2 | 1.000229 |
| 7000.0 | 785.0 | 10.0 | 17.5 | 964.7 | 655.9 | 240.0 | 5.0 | 1.000225 |
| 7500.0 | 770.8 | 9.3 | 17.0 | 949.6 | 655.1 | 265.7 | 6.7 | 1.000221 |
| 8000.0 | 756.8 | 10.5 | 15.8 | 928.5 | 656.5 | 297.6 | 10.1 | 1.000216 |
| 8500.0 | 743.0 | 11.0 | 15.0 | 910.1 | 657.0 | 307.1 | 12.8 | 1.000212 |
| 9000.0 | 729.4 | 9.9 | 15.0 | 896.9 | 655.7 | 308.5 | 13.5 | 1.000208 |
| 9500.0 | 716.1 | 8.8 | 15.0 | 884.0 | 654.5 | 293.4 | 18.5 | 1.000205 |
| 10000.0 | 703.1 | 7.8 | 15.0 | 871.2 | 653.2 | 280.7 | 27.6 | 1.000202 |
| 10500.0 | 690.0 | 6.7 | 16.7 | 858.3 | 652.0 | 288.6 | 34.1 | 1.000199 |
| 11000.0 | 677.1 | 5.5 | 19.0 | 845.6 | 650.7 | 296.0 | 39.7 | 1.000197 |
| 11500.0 | 664.5 | 4.4 | 21.2 | 833.1 | 649.4 | 302.2 | 36.9 | 1.000194 |
| 12000.0 | 652.1 | 3.3 | 23.4 | 820.8 | 648.1 | 305.6 | 34.5 | 1.000192 |
| 12500.0 | 639.9 | 2.2 | 25.7 | 808.7 | 646.8 | 296.1 | 32.6 | 1.000189 |
| 13000.0 | 628.0 | 1.1 | 27.9 | 796.8 | 645.5 | 289.5 | 31.6 | 1.000187 |
| 13500.0 | 616.2 | -.0 | 30.2 | 785.1 | 644.2 | 288.8 | 30.7 | 1.000184 |
| 14000.0 | 604.7 | -1.1 | 32.4 | 773.5 | 642.9 | 291.7 | 31.9 | 1.000182 |
| 14500.0 | 593.4 | -2.2 | 34.0 | 761.9 | 641.7 | 295.5 | 34.1 | 1.000179 |
| 15000.0 | 582.0 | -3.0 | 34.0 | 749.8 | 640.7 | 296.9 | 35.7 | 1.000176 |
| 15500.0 | 570.9 | -3.9 | 34.0 | 737.8 | 639.6 | 297.5 | 36.8 | 1.000173 |
| 16000.0 | 560.0 | -4.8 | 33.7 | 726.3 | 638.5 | 296.8 | 36.9 | 1.000169 |
| 16500.0 | 549.1 | -6.1 | 32.4 | 715.6 | 636.9 | 295.9 | 37.1 | 1.000166 |
| 17000.0 | 538.4 | -7.3 | 31.2 | 705.0 | 635.4 | 294.7 | 37.3 | 1.000163 |
| 17500.0 | 527.9 | -8.6 | 29.9 | 694.7 | 633.9 | 292.5 | 35.7 | 1.000160 |
| 18000.0 | 517.7 | -9.8 | 28.7 | 684.5 | 632.4 | 290.3 | 34.3 | 1.000157 |
| 18500.0 | 507.6 | -11.1 | 27.4 | 674.4 | 630.8 | 290.2 | 33.7 | 1.000154 |

STATION ALTITUDE 4051.00 FEET MSL
7 DEC. 77 0900 HRS MST
ASCENSION NO. 469

UPPER AIR DATA
3410030469
JALLEN

TABLE XII. (CONT)

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | DIRECTION DEGREES (TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|---------------------------|-----------------------------|---------------------------|
| 19000.0 | 497.7 | -11.3 | 21.5 | 661.9 | 630.5 | 292.2 | 33.7 | 1.000150 |
| 19500.0 | 487.9 | -11.1 | 19.3 | 648.4 | 630.7 | 296.2 | 34.6 | 1.000147 |
| 20000.0 | 478.1 | -12.3 | 19.0 | 638.3 | 629.3 | 299.1 | 35.6 | 1.000145 |
| 20500.0 | 468.5 | -13.8 | 19.0 | 629.1 | 627.5 | 301.1 | 36.5 | 1.000142 |
| 21000.0 | 459.1 | -15.2 | 19.0 | 620.0 | 625.8 | 301.8 | 36.9 | 1.000140 |
| 21500.0 | 449.9 | -16.7 | 19.0 | 611.0 | 624.0 | 301.9 | 37.1 | 1.000138 |
| 22000.0 | 440.9 | -18.1 | 19.0 | 602.2 | 622.2 | 303.5 | 37.4 | 1.000136 |
| 22500.0 | 432.1 | -19.6 | 19.0 | 593.5 | 620.4 | 305.7 | 37.6 | 1.000134 |
| 23000.0 | 423.3 | -20.8 | 18.5 | 584.2 | 619.0 | 307.8 | 38.3 | 1.000131 |
| 23500.0 | 414.7 | -21.6 | 17.6 | 574.3 | 617.9 | 309.9 | 39.0 | 1.000129 |
| 24000.0 | 406.1 | -22.5 | 16.7 | 564.5 | 616.8 | 311.7 | 39.1 | 1.000127 |
| 24500.0 | 397.8 | -23.6 | 16.1 | 555.1 | 615.5 | 313.1 | 39.2 | 1.000125 |
| 25000.0 | 389.4 | -24.9 | 16.3 | 546.4 | 613.8 | 312.9 | 38.9 | 1.000123 |
| 25500.0 | 381.1 | -26.3 | 16.6 | 537.9 | 612.1 | 311.9 | 38.9 | 1.000121 |
| 26000.0 | 373.1 | -27.7 | 16.8 | 529.5 | 610.4 | 309.6 | 39.8 | 1.000119 |
| 26500.0 | 365.2 | -29.1 | 17.1 | 521.2 | 608.7 | 308.0 | 40.5 | 1.000117 |
| 27000.0 | 357.5 | -30.4 | 17.3 | 513.1 | 607.0 | 307.0 | 40.9 | 1.000115 |
| 27500.0 | 350.0 | -31.8 | 17.6 | 505.2 | 605.2 | 306.3 | 40.8 | 1.000113 |
| 28000.0 | 342.6 | -33.2 | 17.8 | 497.3 | 603.5 | 305.8 | 40.3 | 1.000111 |
| 28500.0 | 335.3 | -34.5 | 17.1** | 489.5 | 601.8 | 304.7 | 40.2 | 1.000109 |
| 29000.0 | 327.9 | -35.8 | 13.7** | 481.4 | 600.2 | 303.4 | 40.2 | 1.000107 |
| 29500.0 | 320.8 | -37.1 | 10.3** | 473.4 | 598.5 | 303.4 | 38.9 | 1.000106 |
| 30000.0 | 313.7 | -38.4 | 6.9** | 465.6 | 596.9 | 303.7 | 37.3 | 1.000104 |
| 30500.0 | 306.9 | -39.7 | 3.5** | 457.9 | 595.3 | 305.3 | 37.4 | 1.000102 |
| 31000.0 | 300.1 | -41.0 | .1** | 450.3 | 593.6 | 307.1 | 38.0 | 1.000100 |
| 31500.0 | 293.3 | -42.3 | | 442.6 | 591.9 | 308.9 | 39.1 | 1.000099 |
| 32000.0 | 286.7 | -43.6 | | 435.1 | 590.2 | 310.6 | 40.4 | 1.000097 |
| 32500.0 | 280.1 | -44.9 | | 427.7 | 588.5 | 310.9 | 41.3 | 1.000095 |
| 33000.0 | 273.8 | -46.3 | | 420.4 | 586.8 | 310.6 | 42.1 | 1.000094 |
| 33500.0 | 267.6 | -47.6 | | 413.2 | 585.1 | 310.1 | 43.3 | 1.000092 |

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.00 FEET MSL
7 DEC. 77 0900 HRS MST
ASCENSION NO. 469

UPPER AIR DATA
3410030469
JALLEN

GEODETIC COORDINATES
33.16712 LAT NEG
106.49511 LON NEG

TABLE XII. (CONT)

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE | | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND | | WIND DATA DIRECTION (TN) DEGREES | SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|-------------------|-------|--|----------------|---------------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | | | KNOTS | KNOTS | | | |
| 34000.0 | 261.5 | -48.9 | | | 406.2 | 583.4 | | 309.7 | 44.9 | 1.000090 |
| 34500.0 | 255.5 | -50.2 | | | 399.3 | 581.6 | | 309.2 | 44.5 | 1.000089 |
| 35000.0 | 249.7 | -51.5 | | | 392.5 | 580.0 | | 308.6 | 42.4 | 1.000087 |
| 35500.0 | 243.9 | -52.3 | | | 384.7 | 578.9 | | 304.6 | 42.0 | 1.000086 |
| 36000.0 | 238.2 | -52.9 | | | 376.8 | 578.1 | | 297.5 | 43.6 | 1.000084 |
| 36500.0 | 232.6 | -52.3 | | | 366.9 | 578.9 | | 292.1 | 48.4 | 1.000082 |
| 37000.0 | 227.2 | -52.6 | | | 358.8 | 578.6 | | 288.7 | 55.7 | 1.000080 |
| 37500.0 | 221.8 | -52.9 | | | 350.8 | 578.2 | | 288.0 | 61.9 | 1.000078 |
| 38000.0 | 216.6 | -53.2 | | | 343.0 | 577.8 | | 288.4 | 67.5 | 1.000076 |
| 38500.0 | 211.6 | -53.4 | | | 335.4 | 577.5 | | 288.5 | 70.9 | 1.000075 |
| 39000.0 | 206.6 | -53.7 | | | 328.0 | 577.1 | | 288.6 | 73.5 | 1.000073 |
| 39500.0 | 201.7 | -54.0 | | | 320.7 | 576.7 | | 288.6 | 74.9 | 1.000071 |
| 40000.0 | 196.9 | -54.5 | | | 313.8 | 576.0 | | 288.4 | 75.8 | 1.000070 |
| 40500.0 | 192.2 | -55.2 | | | 307.2 | 575.2 | | 288.5 | 76.9 | 1.000068 |
| 41000.0 | 187.6 | -55.9 | | | 300.8 | 574.3 | | 288.7 | 78.0 | 1.000067 |
| 41500.0 | 183.1 | -56.5 | | | 294.5 | 573.4 | | 288.8 | 76.6 | 1.000066 |
| 42000.0 | 178.7 | -57.2 | | | 288.3 | 572.5 | | 288.8 | 73.6 | 1.000064 |
| 42500.0 | 174.4 | -57.9 | | | 282.2 | 571.6 | | 288.6 | 70.0 | 1.000063 |
| 43000.0 | 170.2 | -58.5 | | | 276.3 | 570.7 | | 288.3 | 66.1 | 1.000062 |
| 43500.0 | 166.2 | -59.2 | | | 270.5 | 569.9 | | 288.0 | 64.1 | 1.000060 |
| 44000.0 | 162.2 | -59.9 | | | 264.9 | 569.0 | | 287.8 | 63.5 | 1.000059 |
| 44500.0 | 158.3 | -60.5 | | | 259.3 | 568.1 | | 287.7 | 63.3 | 1.000058 |
| 45000.0 | 154.5 | -61.2 | | | 253.9 | 567.2 | | 287.6 | 63.7 | 1.000057 |
| 45500.0 | 150.8 | -61.9 | | | 248.6 | 566.3 | | 287.6 | 64.3 | 1.000055 |
| 46000.0 | 147.1 | -62.3 | | | 243.0 | 565.6 | | 287.6 | 65.6 | 1.000054 |
| 46500.0 | 143.4 | -62.8 | | | 237.5 | 565.0 | | 287.7 | 67.0 | 1.000053 |
| 47000.0 | 139.8 | -63.2 | | | 232.1 | 564.5 | | 287.6 | 67.1 | 1.000052 |
| 47500.0 | 136.4 | -63.7 | | | 226.8 | 563.9 | | 287.5 | 66.9 | 1.000051 |
| 48000.0 | 133.0 | -64.1 | | | 221.6 | 563.3 | | 287.7 | 66.3 | 1.000049 |
| 48500.0 | 129.7 | -64.5 | | | 216.6 | 562.7 | | 288.7 | 65.1 | 1.000048 |

UPPER AIR DATA
3410030469
JALLEN
TABLE XII. (CONT)

STATION ALTITUDE 4051.00 FEET MSL
7 DEC. 77 0900 HRS MST
ASCENSION NO. 469

GEODETIC COORDINATES
33.16712 LAT NEG
106.49511 LON NEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | DEWPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES (TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|----------------------------|------------------------|----------------------|------------------------------|----------------------------|-------------------------------------|----------------|---------------------------|
| 49000.0 | 126.5 | -65.0 | | | 211.6 | 562.1 | 289.9 | 63.9 | 1.000047 |
| 49500.0 | 123.3 | -65.4 | | | 206.8 | 561.5 | 291.9 | 62.8 | 1.000046 |
| 50000.0 | 120.2 | -65.9 | | | 202.1 | 560.9 | 293.8 | 61.7 | 1.000045 |
| 50500.0 | 117.3 | -66.3 | | | 197.5 | 560.3 | 294.7 | 60.1 | 1.000044 |
| 51000.0 | 114.3 | -66.8 | | | 193.0 | 559.7 | 295.7 | 58.4 | 1.000043 |
| 51500.0 | 111.5 | -67.2 | | | 188.6 | 559.1 | 295.2 | 57.2 | 1.000042 |
| 52000.0 | 108.7 | -67.6 | | | 184.3 | 558.5 | 294.7 | 56.0 | 1.000041 |
| 52500.0 | 106.0 | -68.1 | | | 180.1 | 557.9 | 294.0 | 54.7 | 1.000040 |
| 53000.0 | 103.4 | -68.5 | | | 176.0 | 557.3 | 293.1 | 53.4 | 1.000039 |
| 53500.0 | 100.8 | -69.0 | | | 172.0 | 556.7 | 293.1 | 51.9 | 1.000038 |
| 54000.0 | 98.3 | -69.1 | | | 167.8 | 556.5 | 293.6 | 50.1 | 1.000037 |
| 54500.0 | 95.8 | -69.0 | | | 163.5 | 556.6 | 294.4 | 47.8 | 1.000036 |
| 55000.0 | 93.4 | -69.0 | | | 159.3 | 556.7 | 296.0 | 44.3 | 1.000035 |
| 55500.0 | 91.0 | -68.9 | | | 155.3 | 556.7 | 297.8 | 40.9 | 1.000035 |
| 56000.0 | 88.7 | -68.7 | | | 151.2 | 557.1 | 298.4 | 35.1 | 1.000034 |
| 56500.0 | 86.5 | -67.8 | | | 146.7 | 558.3 | 299.2 | 29.2 | 1.000033 |
| 57000.0 | 84.3 | -66.9 | | | 142.5 | 559.4 | 298.8 | 23.5 | 1.000032 |
| 57500.0 | 82.2 | -66.1 | | | 138.3 | 560.6 | 296.6 | 17.8 | 1.000031 |
| 58000.0 | 80.1 | -66.3 | | | 135.0 | 560.3 | 292.4 | 12.3 | 1.000030 |
| 58500.0 | 78.1 | -67.4 | | | 132.2 | 558.8 | 286.7 | 9.7 | 1.000029 |
| 59000.0 | 76.1 | -68.5 | | | 129.6 | 557.4 | 277.0 | 7.2 | 1.000029 |
| 59500.0 | 74.2 | -69.5 | | | 127.0 | 555.9 | 267.2 | 5.7 | 1.000028 |
| 60000.0 | 72.3 | -70.6 | | | 124.4 | 554.4 | 261.9 | 4.9 | 1.000028 |
| 60500.0 | 70.5 | -71.7 | | | 121.9 | 552.9 | 256.3 | 4.3 | 1.000027 |
| 61000.0 | 68.7 | -73.0 | | | 119.6 | 551.1 | 270.7 | 5.3 | 1.000027 |
| 61500.0 | 66.9 | -72.4 | | | 116.2 | 552.0 | 279.8 | 6.7 | 1.000026 |
| 62000.0 | 65.2 | -71.5 | | | 112.7 | 553.2 | 287.0 | 9.1 | 1.000025 |
| 62500.0 | 63.6 | -70.6 | | | 109.3 | 554.5 | 291.1 | 11.9 | 1.000024 |
| 63000.0 | 61.9 | -69.4 | | | 105.9 | 556.1 | 293.5 | 12.6 | 1.000024 |
| 63500.0 | 60.4 | -67.2 | | | 102.1 | 559.1 | 295.8 | 11.5 | 1.000023 |

STATION ALTITUDE 4051.00 FEET MSL
7 DEC. 77 0900 HRS MST
ASCENSION NO. 469

UPPER AIR DATA
3410030469
JALLEN
TABLE XII. (CONT)

GEODETIC COORDINATES
33.16712 LAT NEG
106.49511 LON NEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
| | | | | | | DIRECTION DEGREES(TN) | SPEED KNOTS | |
| 64000.0 | 58.9 | -65.0 | | 98.5 | 562.1 | 298.5 | 10.2 | 1.000022 |
| 64500.0 | 57.4 | -62.8 | | 95.1 | 565.1 | 302.7 | 7.6 | 1.000021 |
| 65000.0 | 56.0 | -62.3 | | 92.5 | 565.7 | 310.8 | 5.2 | 1.000021 |
| 65500.0 | 54.6 | -62.0 | | 90.1 | 566.1 | 316.6 | 3.9 | 1.000020 |
| 66000.0 | 53.3 | -61.7 | | 87.8 | 566.5 | 318.3 | 3.3 | 1.000020 |
| 66500.0 | 52.0 | -61.4 | | 85.5 | 566.9 | 319.7 | 2.8 | 1.000019 |
| 67000.0 | 50.7 | -61.1 | | 83.3 | 567.3 | 312.5 | 3.0 | 1.000019 |
| 67500.0 | 49.5 | -60.8 | | 81.2 | 567.7 | 306.2 | 3.2 | 1.000018 |
| 68000.0 | 48.3 | -60.7 | | 79.2 | 567.9 | 299.9 | 3.5 | 1.000018 |
| 68500.0 | 47.1 | -60.5 | | 77.2 | 568.1 | 294.4 | 4.0 | 1.000017 |
| 69000.0 | 46.0 | -60.4 | | 75.3 | 568.3 | 290.2 | 4.6 | 1.000017 |
| 69500.0 | 44.9 | -60.2 | | 73.4 | 568.5 | 292.0 | 4.4 | 1.000016 |
| 70000.0 | 43.8 | -60.0 | | 71.6 | 568.7 | 294.3 | 4.2 | 1.000016 |
| 70500.0 | 42.7 | -59.9 | | 69.8 | 568.9 | 297.2 | 3.6 | 1.000016 |
| 71000.0 | 41.7 | -59.7 | | 68.0 | 569.1 | 303.4 | 2.5 | 1.000015 |
| 71500.0 | 40.7 | -59.6 | | 66.3 | 569.3 | 319.3 | 1.4 | 1.000015 |
| 72000.0 | 39.7 | -59.4 | | 64.7 | 569.5 | 345.0 | 1.4 | 1.000014 |
| 72500.0 | 38.7 | -59.3 | | 63.1 | 569.8 | 1.8 | 1.8 | 1.000014 |
| 73000.0 | 37.8 | -59.1 | | 61.5 | 570.0 | 12.2 | 2.3 | 1.000014 |
| 73500.0 | 36.9 | -59.0 | | 60.0 | 570.2 | 17.9 | 3.0 | 1.000013 |
| 74000.0 | 36.0 | -58.8 | | 58.5 | 570.4 | 21.3 | 3.7 | 1.000013 |
| 74500.0 | 35.1 | -58.6 | | 57.0 | 570.6 | 26.6 | 4.5 | 1.000013 |
| 75000.0 | 34.3 | -58.5 | | 55.6 | 570.8 | 32.4 | 5.2 | 1.000012 |
| 75500.0 | 33.4 | -58.3 | | 54.2 | 571.0 | 36.7 | 6.1 | 1.000012 |
| 76000.0 | 32.6 | -58.1 | | 52.9 | 571.3 | 42.7 | 6.4 | 1.000012 |
| 76500.0 | 31.8 | -57.7 | | 51.5 | 571.8 | 48.8 | 6.6 | 1.000011 |
| 77000.0 | 31.1 | -57.4 | | 50.2 | 572.3 | 54.5 | 6.9 | 1.000011 |
| 77500.0 | 30.3 | -57.0 | | 48.9 | 572.8 | 63.7 | 5.8 | 1.000011 |
| 78000.0 | 29.6 | -56.8 | | 47.7 | 573.0 | 76.6 | 4.9 | 1.000011 |
| 78500.0 | 28.9 | -56.9 | | 46.5 | 572.9 | 90.0 | 4.2 | 1.000010 |

STATION ALTITUDE 4051.00 FEET MSL
7 DEC. 77 0900 HRS MST
ASCENSION NO. 469

UPPER AIR DATA
3410030469
JALLEN

TABLE XII. (CONT)

GEODETIC COORDINATES
33.16712 LAT NEG
106.49511 LON NEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREE CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 79000.0 | 28.2 | -56.9 | | 45.4 | 572.9 | 94.0 | 3.0 | 1.000010 |
| 79500.0 | 27.5 | -57.0 | | 44.4 | 572.8 | 103.3 | 1.8 | 1.000010 |
| 80000.0 | 26.9 | -57.0 | | 43.3 | 572.8 | 100.8 | 1.1 | 1.000010 |
| 80500.0 | 26.2 | -56.4 | | 42.2 | 573.6 | 69.6 | 1.4 | 1.000009 |
| 81000.0 | 25.6 | -55.7 | | 41.0 | 574.5 | 50.7 | 1.8 | 1.000009 |
| 81500.0 | 25.0 | -55.0 | | 39.9 | 575.4 | 43.0 | 2.1 | 1.000009 |
| 82000.0 | 24.4 | -54.7 | | 38.9 | 575.8 | 39.9 | 2.1 | 1.000009 |
| 82500.0 | 23.8 | -54.6 | | 38.0 | 576.0 | 36.7 | 2.1 | 1.000009 |
| 83000.0 | 23.3 | -54.4 | | 37.0 | 576.2 | 54.3 | 2.0 | 1.000009 |
| 83500.0 | 22.7 | -54.3 | | 36.1 | 576.4 | 92.3 | 2.7 | 1.000009 |
| 84000.0 | 22.2 | -54.1 | | 35.3 | 576.6 | 110.2 | 4.0 | 1.000009 |
| 84500.0 | 21.6 | -54.0 | | 34.4 | 576.8 | | | 1.000009 |
| 85000.0 | 21.1 | -53.8 | | 33.6 | 576.9 | | | 1.000007 |
| 85500.0 | 20.6 | -53.7 | | 32.8 | 577.1 | | | 1.000007 |
| 86000.0 | 20.1 | -53.5 | | 32.0 | 577.3 | | | 1.000007 |

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 77 0900 HRS MST
 ASCENSION NO. 469

MANDATORY LEVELS
 3410030469
 JALLEN
 TABLE XIII.

GEODETIC COORDINATES
 33.16712 LAT NEG
 106.49511 LON NEG

| PRESSURE GEOPOTENTIAL | | TEMPERATURE | | RFL. HUM. PERCENT | WIND DATA | |
|-----------------------|--------|------------------------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS | FEET | AIR DEGREES CENTIGRADE | DEWPOINT CENTIGRADE | | DIRECTION DEGREES(TN) | SPEED KNOTS |
| 850.0 | 4847. | 4.5 | -5.3 | 49. | 34.4 | 1.7 |
| 800.0 | 6485. | 10.8 | -12.5 | 18. | 214.7 | 3.1 |
| 750.0 | 8244. | 11.1 | -14.4 | 15. | 305.9 | 12.3 |
| 700.0 | 10120. | 7.5 | -17.4 | 15. | 280.8 | 29.6 |
| 650.0 | 12105. | 3.1 | -15.5 | 24. | 303.6 | 34.0 |
| 600.0 | 14214. | -1.6 | -15.6 | 33. | 293.5 | 32.9 |
| 550.0 | 16470. | -6.0 | -19.8 | 33. | 295.9 | 37.1 |
| 500.0 | 18891. | -11.4 | -28.8 | 22. | 291.4 | 33.6 |
| 450.0 | 21524. | -16.7 | -34.8 | 19. | 301.9 | 37.2 |
| 400.0 | 24386. | -23.2 | -41.9 | 16. | 313.1 | 39.2 |
| 350.0 | 27538. | -31.8 | -48.3 | 18. | 306.2 | 40.7 |
| 300.0 | 31044. | -41.0 | | | 307.4 | 38.1 |
| 250.0 | 35020. | -51.5 | | | 308.5 | 42.1 |
| 200.0 | 39742. | -54.1 | | | 288.5 | 75.5 |
| 175.0 | 42529. | -57.8 | | | 288.6 | 69.1 |
| 150.0 | 45688. | -62.0 | | | 287.6 | 65.0 |
| 125.0 | 49360. | -65.2 | | | 291.8 | 62.9 |
| 100.0 | 53778. | -69.1 | | | 293.5 | 50.4 |
| 80.0 | 58175. | -66.4 | | | 288.9 | 10.5 |
| 70.0 | 60792. | -72.0 | | | 270.0 | 5.3 |
| 60.0 | 63789. | -66.6 | | | 298.4 | 10.3 |
| 50.0 | 67480. | -60.9 | | | 303.9 | 3.3 |
| 40.0 | 72047. | -59.5 | | | 355.9 | 1.6 |
| 30.0 | 77983. | -56.8 | | | 85.6 | 4.6 |
| 25.0 | 81778. | -55.0 | | | 39.3 | 2.1 |
| 20.0 | 86474. | -53.5 | | | | |

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.